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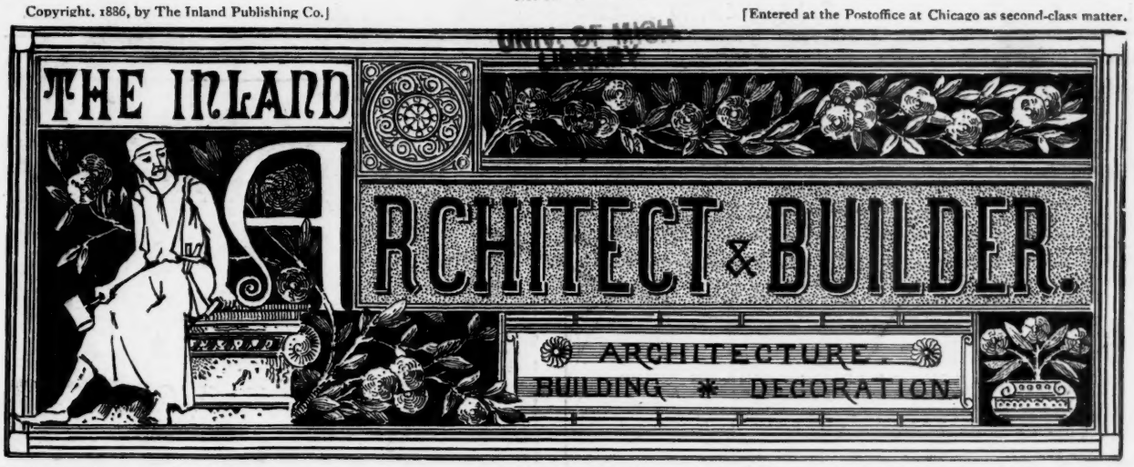


A MONTHLY JOURNAL (WITH AN INTERMEDIATE NEWS NUMBER) DEVOTED TO WESTERN INTERESTS.

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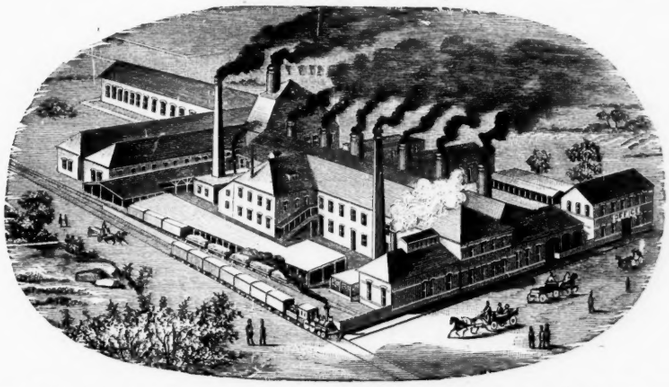

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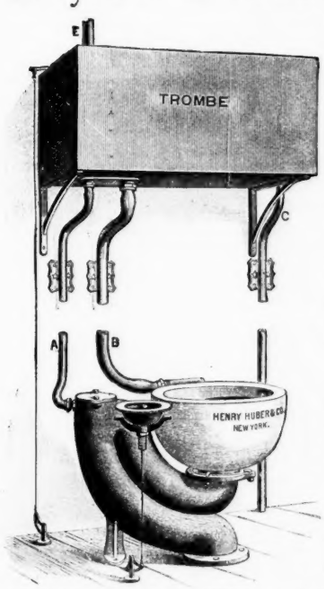


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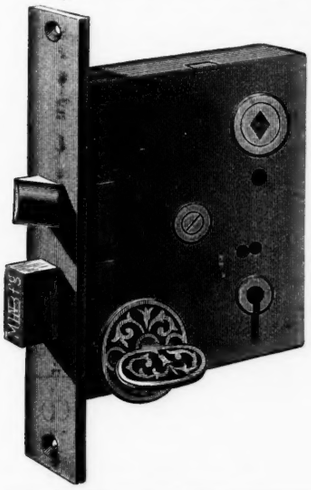

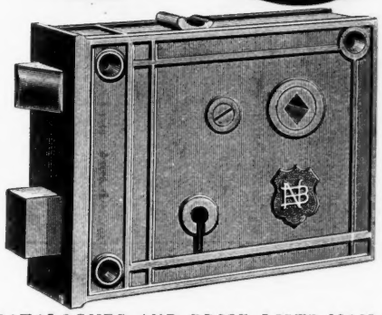

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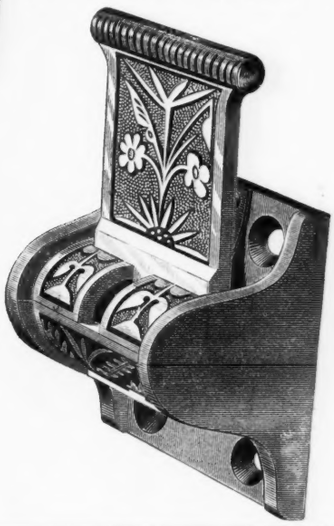

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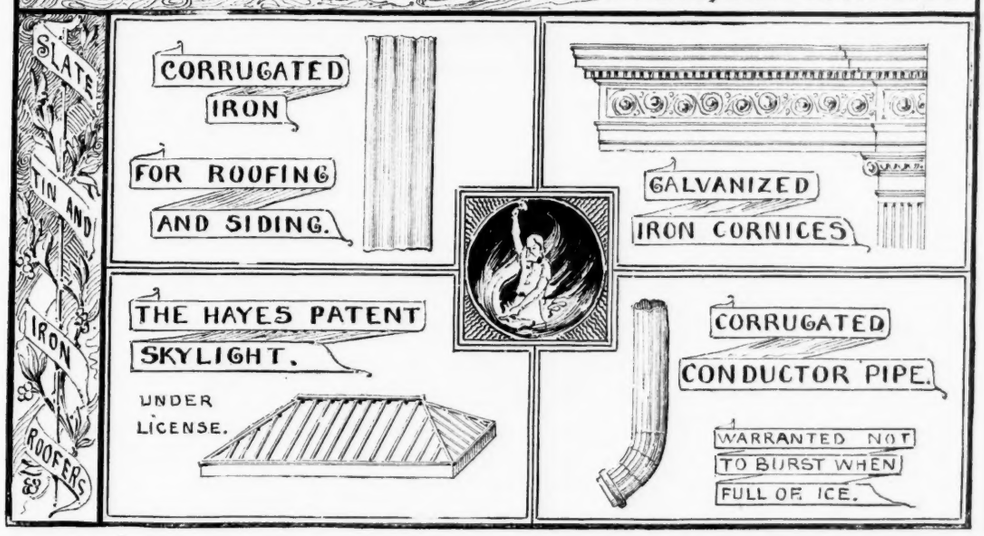

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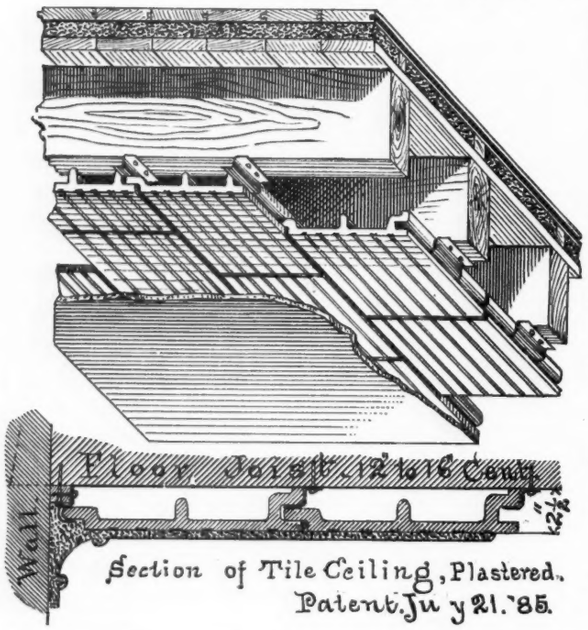


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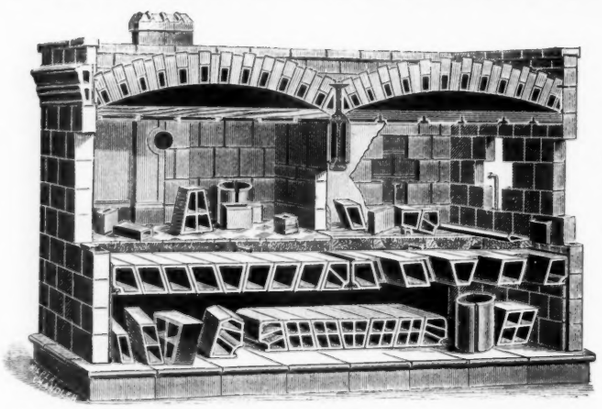

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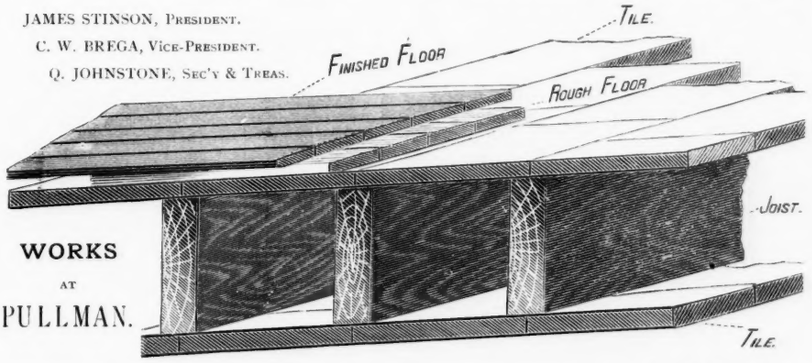


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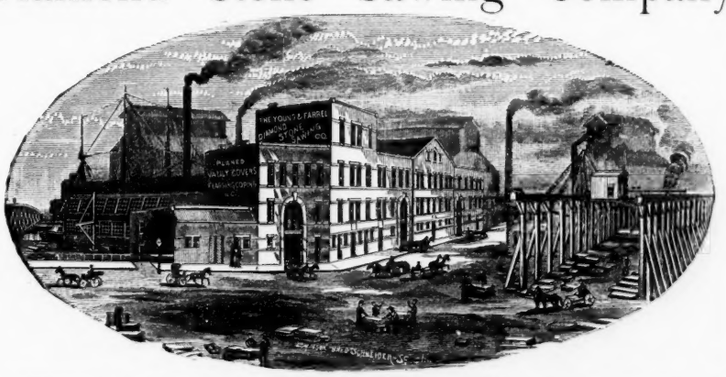

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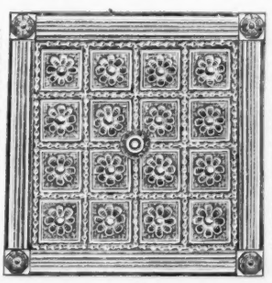

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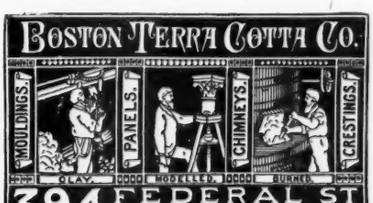


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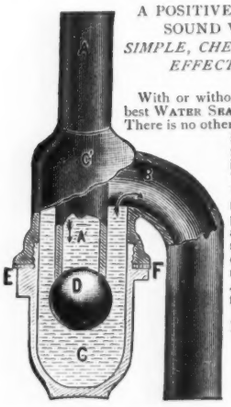


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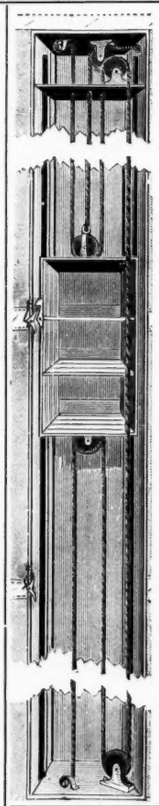

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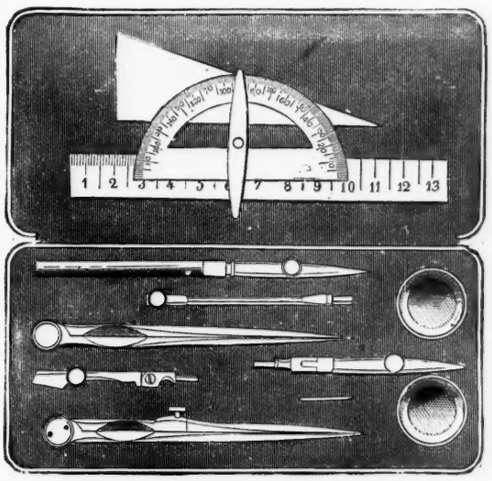

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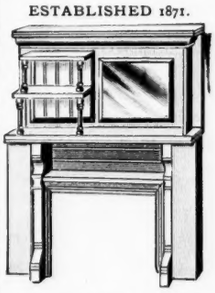

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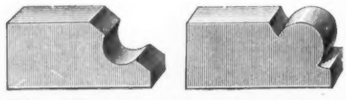

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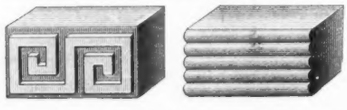

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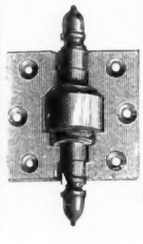

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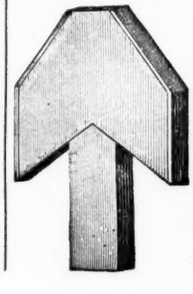

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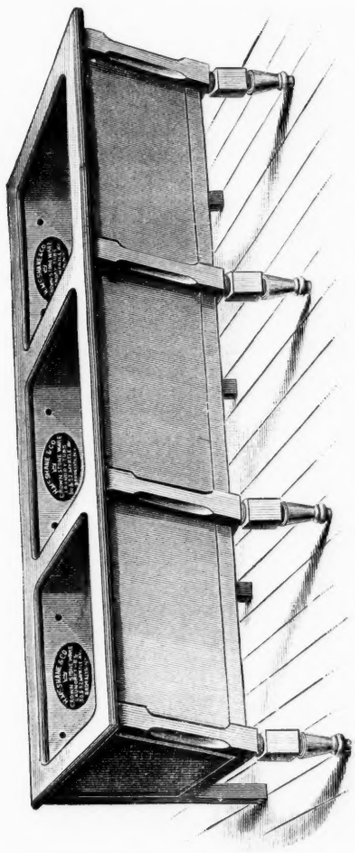

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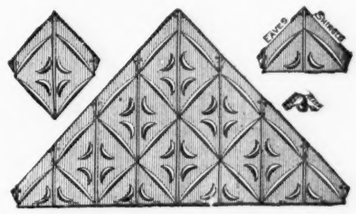


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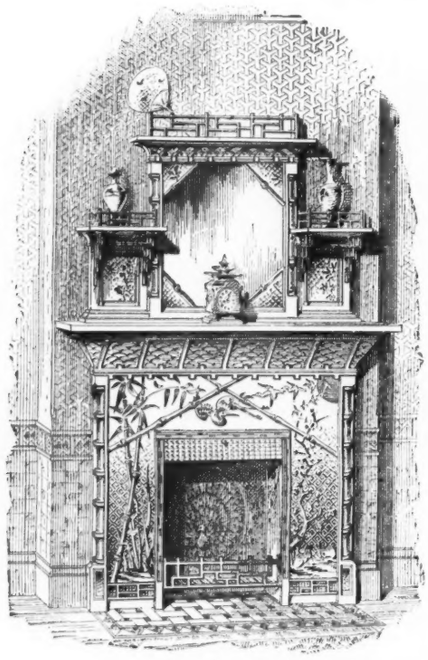

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Vol. VIII. No. 8

DECEMBER, 1886.

THE

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THE third annual convention of the Western Association of Architects, the entire proceedings of which we publish with this edition, was most successful in general results. While, as may be seen, a large amount of business was transacted the meeting was essentially one of general fraternizing and good fellowship. The visitors were pleasantly entertained by the Chicago architects in an informal way which added greatly to the enjoyment of all, and much credit is due S. A. Treat, chairman of the Committee on Entertainment, and his co-workers for the pleasure thus afforded the visiting architects. Although from the large amount of work carried over to the fall season, owing to the labor troubles of the spring, many architects had a large amount of work on hand, which it was difficult to leave. The attendance was composed of a large percentage of representative men from fourteen states. These were Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Nebraska, New York, Ohio, Tennessee, Texas, and Wisconsin; several other states and territories where memberships exist not being represented.

JOHN WELLBORN ROOT, who was elected president of the Western Association of Architects, is too well known to his confreres both in America and Europe to require extended introduction. A young man, barely past thirty-five years of age, his development from a promising draughtsman to the designer and constructor of some of the largest and most important private buildings in the country, has been compassed in almost a decade. As a member of the Western Association his genial presence has made each confrere a friend, while his work as secretary during the past year was executed with a dispatch and thoroughness that will stand as an example for his predecessors.

JAMES F. ALEXANDER, of La Fayette, Ind., who was elected secretary, has been a prominent member of the Western Association since its organization. His exceptional abilities were recognized, and a year ago he was placed upon the most important committee of the year, that in charge of the bill to re-organize the office of Supervising Architect, beside being appointed chairman of the committee upon State Organization. Samuel A. Treat, the treasurer, served so well in that capacity last year that he was re-elected by a unanimous vote. The Board of Directors is exceptionally strong, Dankmar Adler was elected chairman, the other members being G. M. Goodwin, of St. Paul, George W. Rapp and Charles Crapsey, of Cincinnati, and C. A. Curtin, of Louisville. The convention will be held next year at Cincinnati, the choice being made after a careful consideration of the question, and will doubtless be attended by a larger number of eastern architects than were present at the Chicago convention.

PRESIDENT ADLER'S opening address was brief, straightforward and practical. Noteworthy features are his comments on the present position and tendencies of American architecture and the birth of that national style whose "star in the east" seems now fairly above the horizon; also the sound position taken in respect to competitions. The distinction drawn between that true and honorable competition which values a man by his executed work, and the shallow, and discreditable competition which looks no farther than plans and perspectives, is new and very suggestive. Mr. John W. Root's proposition to define the use and

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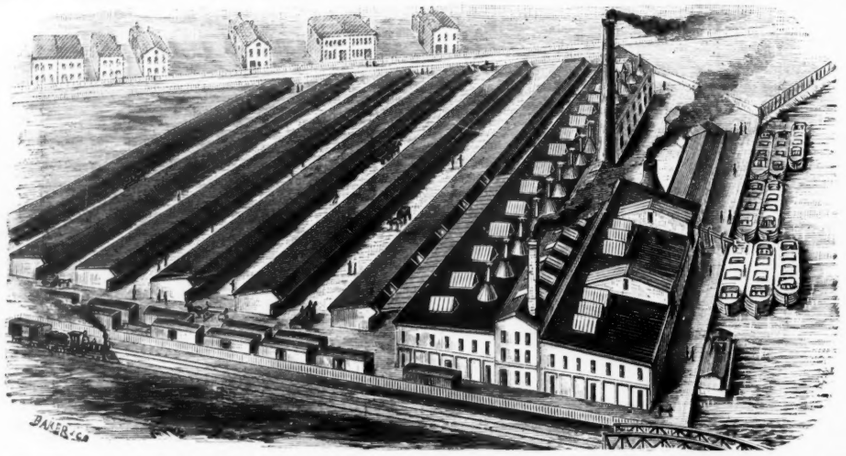

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## Essay on Inspiration.*

BY LOUIS H. SULLIVAN, ARCHITECT, CHICAGO.

### PART I.

GROWTH.—A SPRING SONG.

WHEN birds are caroling, and breezes swiftly fly, when large abundant nature greets the eye, clothed in fresh filigree of tender green, when all is animation and endeavor, when days are lengthening, and storm clouds smiling weep, when fresh from every nook springs forth new life,—then does the heart awake in springtime gladness, breezy and melodious as the air, to join the swelling anthem of rejuvenated life, to mate with birds and flowers and breezes, spontaneous and jubilant as the glow of dawn, to pulsate ardently with hope, rich in desire so tremulously keen,—then wondrous joy to simply live,—and question not, to walk into the ample air, to open wide the portals of the winter-bounded soul and eagerly to hail the new-born world with voice like mountain torrent quick melted from the heart's accumulated snows,—even so eagerly and so voluminously does the song gush forth and wildly leap, tumultuous as nature's self,—to fall in gentle spray upon the misty valley far below, and there, to live bound up within the very life it sung.

O wondrous joy that this should be the springtime, and this the heart to greet it and to sing a song more wondrous still of joy within the sun-touched soul.

For such a song doth rise within me like a boundless symphony, rich chorded, and intense with lambent melodies which come unbidden from the general glow of life; a symphony whose theme is interwoven with this eager springtime life, a theme whereof the measure, caught up by the senses quick from every growing thing, doth seem to move, as all in nature here now seems to move in rythmic cadence toward some subtile and tremendous consummation.

In tender light of dawning spring that song's incentive filters through the mists when the ardent sun, flushed and impatient pulsates hotly toward the summit of the heavens; in urgent need the equal mounting soul too pulsates toward the crown of inspiration, while pensive nature wakening with the morn makes manifest the latent measure of her sweet and procreant rythm. The lark floats up to vocalize the limpid atmosphere,—the shadows shorten with her tense refrain. Abounding joy starts nimbly forth from hidden sources; vibrant, the heart, filled to the quick, o'erflows, the tongue unloosens, and the inhaled breezes sing thus, respirant, anew:—

O, soft, melodious springtime! First-born of life and love! How endearingly the thrilling voice of destiny hath called thee, and with what devotion thou hast come! And thou thyself hast taken up that call, made doubly potent by thy sweet embrace, and thou hast wrought the self-same magic on my slumbering soul.

Joy of the radiant day, joy of the sun-kissed verdure, joy of the radiant soul! The instant power of sympathy girdles and binds them together with bands sufficient as the ethereal sympathy of the planets coursing around the central virtue of the sun. So, orbital and responsive, colored to its rise, high noon and twilight, revolves the planetary spread of nature round the attracting and illuminating soul. By that soul's effulgent light look I out again upon thee, wondrous springtime, casting on thee brilliant high lights, and beyond thee changing shadows.

Now do I know thee as thou art, look on thee, through thee, and beyond thee toward a far off source whence thy joy has come.

Surge and surge through thee to me, the hugely undulating waves from distant raging joy within the vast expanse, that now break on our shores in foaming and majestic surf of springtime life.

Abysmal spring! The myriad nebulæ were surf upon your cosmic shores. Stupendous winter passed away, the dawn mists parted in primeval splendor, and through your vistas floating rose the lark, the world, uttering as a morning song of promise the melodious succession of the races.

Of such are we; and high above our struggling, joyous verdure, our parting mists, our urgent and propulsive dawn, poised serenely, soaring ever toward the azure heights rises the immortal spirit of man, showering tones exalted, prophetic, volatile, spontaneous—a spring song to the waiting soul, a hymn of praise to nature's bounty, a sweet and unnamed outburst of itself.

Of such melodious origin are all our hopes, our sympathies, our desires; whence here, among us, coming daily, hourly into being, are great and lesser springtimes—each with its dawn, its urgent ruddy sun, its trailing mists, its aromatic sprouting verdure—its trilling songster in the sky.

Of such come likewise protean thought and action, roused and sustained in eagerness by the touch and impulse of desire. Far transmitted yet ever present the creative call of nature sounds inspiring, jubilant and sweet. Responsive, imagination rising quickly to the heights makes thoughtful action magically vocal and complete.

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Through lesser springtime expanding, merging, completing, courses mysterious life, unfolding toward greater, ever greater, ever broadening springtimes, successively through these, and through each intermediary winter sleep, at each renewed adjustment both farther removed yet more intrinsically here than before, ever jocund and agile, ever onward impelled by the rapidly surging and inflowing currents, comprehending and so transmitting the past, fulfilling the present, gestating the future—ever fecund and joyous.

And all this while the dawn-bird singing! On the wings of spring he ever rises, looking down on the lesser springtime growth; looking down on the meadows, the forests deep, ever rising, unfolding and blending in song looks down on the wide spreading plains, on the curving sea, on the shifting clouds that brood over all; alone, from the greater heights looks down on the distant enveloping haze of the swiftly receding world; and transmuted on high, now faintly heard, serenely attuning aloft it floats as the mellow companion the moon chanting softly.

In the stillness intent it now looks down on the balancing swing of the deep brooding world,—ever dawning; singing a hymn to its greater springtime, as I hear, floating high, sing a hymn to the perfect and spherical soul renascent of many a heaving springtime;—consorted still by a voicing spirit, the spirit of unending spring;—the desire, the appeasement, the joy of the world.

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Effusing from such wonders interblended all around, has come to me thus, in soft pulsations, the elemental voice of Nature yearning. Whereby deeply do I know, thou generous and kindly Springtime, why I was touched, O, Prodigal! and captivated by thy presence. Now, nevermore to cease in its crescendo, has the lark's refrain returned in part to thee, a rhapsody of echoes from my soul.

INTERLUDE.

And now the day is done. The trailing splendor in the west fills me with peace. The beckoning twilight leads me toward the cool and placid night. Shadows and the dusk surround me, while here, companioned by a cherished memory, soothed and lulled by the mystic moonlight, I meditate in swiftly deepening strain,—touched by a hint or weird suggestion, a premonition and uncertainty: whence comes it, I must know: wherefore, abiding here in gloom, residuary, musing, ineffably sequestered, do I follow hence the rich suggestive indirections of thy theme, thou softly dimming shade of springtime; undulating with it through the swell of ample summer, gliding detached and phantom-like athwart its mellowing term, to pass away in transcendental twilight, and coalesce with star-lit thoughts beyond.

### PART II.

DECADENCE.—AUTUMN REVERIE.

In pathless wilds, in gray subsiding autumn, where brown leaves settle through the air, descending one by one to join the dead, while winds, adagio, breathe shrill funeral lamentations, tired Nature, there, her task performed, divested of her lovely many-colored garment, withdraws, behind a falling veil, and sinks to sleep.

Like sentinels standing, like spectres, bare and fantastic the trees rattle their dry hard branches.

The migratory birds have gone.

The faded hills squatting grimly together, commune with wind and sky, echoing their miserere.

The sap has sunk into the ground. There is no life but in root, and precarious broadcast seed.

A summer has departed:—never that summer to return; a great life has passed into the tomb, and there, awaits the requiem of winter's snows.

And we, the living, in sympathy, view, ponder and speculate; take up the melancholy theme within our hearts, and through the sad attuning of the mind look out again upon the endless spread of life and dissolution—the fatal chance and certainty of change;—nor think to contravene the destined action and reaction.

The coupled opposites which we call light and darkness, good and evil, fortune and failure, growth and decay, sound and silence, harmony and discord, love and indifference, hope and disappointment, life and death, law and chaos, and their quick engendered brood pass in crowded processional through the deepening twilight of our inclination.

Sombre through the gloom come to the impassioned ear the diminished strains of promise unfulfilled, melting the soul to overflowing languorous compassion.

Now darkness holds full sway: the heart, in anguish, sinks upon the bosom of the deep. The haggard winds moan to the faint-appearing stars; the answering voice of Night, sitting in the heavens, the crescent moon a gem upon her finger, her velvet gown spread about the unhappy spirit, speaks rest to the disconsolate. A hoar frost gathers, glimmering in the mild light; the wanderer, chilled to resignation, moves into the deep valley of negation, to garner up the lineaments of phantom souls.

Slowly the tenebre unfolds its content; the darkness separates, taking visible shapes—shadows within the soul, that are revealed as blighted lilies, and the trampled violet, the shattered oak, disintegrated rock, the parched air, the storm's destruction, the jetsam of the sea; the ashes of a city; the fallen bridge; impeded traffic; broken fortunes.

The shadows multiply,—a host of wraiths:—day dying in the twilight, the waning moon, the fading of yesterday within the sense. Their still, subjective voices spectrally recall our fleeting states:—the departed joyousness of childhood, vanished youth, faded illusions; bespeak the mind's indulgence toward the slow decay of once fresh spontaneity; plead with the heart to feel in sympathy and comprehend the sorrow of unrequited love: golden-warp-dimming shuttle, and so, in turn, to know the language of the silent cot, the footfall heard no more, the touching voice of reminiscence.

Then flock about erroneous judgments, aborted projects, failures of all kinds; as a multitude of seeds fallen upon barren soil, a multitude of seedlings nipped by the frost, a multitude of saplings stricken by adversity, a multitude of bearers shriveled by drouth or worm, a multitude of the gnarled and moss-grown vigorously dying, a multitude of rotting stumps,—a multitude of vanished lives.

In extremity of woe, the hapless wanderer seeks to turn, but there is no turning, and but one result: a lonely, yearning thing of sorrow, with whose last sigh the departing spirit wafted, settles slowly, as a leaf, into the Nirvana.

A great soul is thus swallowed up by deepest gloom within this sepulchre, and can nevermore, the same soul, unregenerate, return. Without alternative it yielded up its life, through overwhelming sympathy with death.

So he who with compassionate solicitude looks on the actual face of dissolution, must surely die in sympathy forthwith. Yet is this not the end;

*Read before the third annual convention of the Western Association of Architects, at Chicago, November 17, 1886.

loads for which a new building is designed in such manner that if subsequently devoted to some very different purposes the architect may not be held to blame for any consequent deterioration in the structure, is practical and important.

THE several important committees appointed last year simply made reports of progress, the work especially of those having in charge the bill for the re-organization of the office of supervising architect and for procuring statutory enactments by state legislatures being of such magnitude as to in all probability cover a number of years of earnest work before any appreciable result can be looked for. In the former, the work will in all probability progress more rapidly, as the heads of the treasury department, as well as the public at large, see the necessity for the change and the recommendation of the present supervising architect also voices the general sentiment contained in the bill. In the latter, the state legislatures and the public as well will have to be brought to a realizing sense of its importance before its passage can be effected.

THE most interesting report was that upon state organization. J. F. Alexander, chairman of that committee, reported five new associations and the almost immediate prospect of the formation of as many more. Among measures of general importance is that changing section four of the constitution providing for the retirement of members to the honorary membership list when they ceased practicing their profession, with the ruling that the entire list of membership should be revised by the Board of Directors to this effect. This will effectually assure to the association a membership composed wholly of architects in the sole and honorable practice of their profession; the association will, in future, publish its proceedings in pamphlet form. A resolution was passed by which any applicant is blackballed by receiving five dissenting votes. The debate on this resolution was interesting.

SOME progress is being made in the collection of legal statistics defining the status, rights and responsibilities of architects as determined by legal decisions in various parts of the country. In the unexpected absence of its chairman, Mr. Illsley, of St. Louis, the report of the committee on competition statistics was deferred. The committee to represent the Western Association at the next convention of the American Institute of Architects reported that they would perform this duty when the American Institute should hold its convention. Some very necessary changes were made in the method of electing new members to the association. A motion to remit initiation fees to members of architectural societies in cities where architectural associations had not been formed was proposed and referred to the Board of Directors, the general sentiment being to discourage union with the Western Association except direct or through the regular channel of state associations.

THE Royal Institute of British Architects has just issued its second volume of the new series of its *Transactions* and also its *Journal of Proceedings*, both of which were first issued in their present form two years ago upon the institute attaining its fiftieth year of foundation. The *Transactions*, published annually, contains the papers presented to the institute at meetings, with notes, etc., and is profusely illustrated with reproductions of drawings, photographs, etc., exhibited in illustration of the papers presented. In this volume there are 228 pages of letterpress and 84 pages of illustrations. The *Journal of Proceedings* is issued every two weeks during the session of the institute, and contains the papers, in full or in abstract, read at the previous meeting with a full report of the discussion. The *Journal of Proceedings* also gives a full report of all business meetings, and is the medium of communication between the different societies and also the members.

THE *Journal* is not illustrated, except by the carefully selected advertisements, which form part of its contents, the object evidently being supplementary or accessory to the annual volume of *Transactions*. The roll of membership shows 419 fellows, 689 associates and a large list of honorary fellows and associates. The American architectural journals, received and recognized as such by the institute, are the *American Architect*, the *California Architect*, the *Sanitary Engineer* and THE INLAND ARCHITECT. Although *Transactions* is issued as official, the institute, as a corporate body, disclaims any responsibility for the statements in the signed articles it contains. The formulation of so extensive and elaborate a volume must of necessity involve an immense amount of labor, and its value to the members of the institute, great as it is, can only be equalled by the fidelity of the secretaries, whose work of compilation alone certainly taxes their time and energies to their fullest extent, making their office, however great in honor, no sinecure in practice.

THE Vienna *Banindustrée Zeitung* announces the publication of two books on house heating and ventilation, which it thinks point to early changes of the most radical nature in these departments of building and equipment. These changes and reforms, strange to say, are to involve a complete reversal of our recent theories and practice and a return to antique methods. In some departments of art the revival of antique forms has been quite fashionable, but few would anticipate an early return to classic ages for instruction on the very practical subjects of house heating and ventilation. *Nulla vestigium retrorsum* seems in peril of falling into discredit, at last, according to our Vienna contemporary, which declares that "All the improved modes of heating and ventilation now in use fail to solve the problem of healthful, comfortable and economical heating and ventilation as admirably and satisfactorily, in every respect, as did the antique methods in relation to the requirements then existing." This comparison embraces the modern hot air, direct and indirect, systems, hot-water heating, steam heat, gas ditto, "and all combinations of the three," which is a pretty comprehensive statement. One of the books thus referred to is entitled, "Modern and Ancient Methods of Heating and Ventilation," by Dr. J. Berger (publisher not named); the other is, "Popular Treatise on Heating and Ventilation," by K. Ulmi, architect, published by Krebs, of Berne. This new (antique revived) theory, which our Vienna contemporary heralds in so impressive a manner, is thus described: "The modus of all rational and healthful house heating must be to warm the floor itself and make it the source of heat for the room by a gentle and universal radiation, which shall be promotive of health and comfort, according to the proverb, 'Feet warm, head cool.' While the methods of practically attaining this result are but cursorily outlined in the books referred to, we are able to announce, thanks to recent improvements in heating arrangements, that the problem may now be considered as fairly solved, and nothing more is required but to enlist the necessary capital to put it in actual operation." The opportunities for profit which will thus be opened to investors are believed to be sufficiently tempting to make it an easy matter to secure the financial assistance needed.

for when in its predestined course the world of hope moves past another vernal equinox, in springtime ecstasy, mid the soft, persuasive rays of fixed serenity of purpose he will emerge from this abode of gloom, and greeting the warm air, will rise again into a nobler, greater life, to bear as rich fruition, a more complex sympathy, a metamorphosed insight, a profoundly changed belief.

And so, as wild flowers spring from manifold remains, do sympathies arise from regions of the dead, sending upward wondrous longings. As the plant grows, so thought grows, by what it feeds upon, its delicate chemistry changing poison into vital sap, to nourish growing sympathy, to the end that leaves and branches spread out in the generous, vivifying air, take on color, and firm visible growth heralding the bud that shall unfold with time its choicest worth:—the lovely flower at once of life and death, which here, hanging in fragrant equilibrium within the present joyous certainty of life and the imminent surrounding nearness, though remoter certainty of coming death, must need exhale its soul in rapture till such moment when the latter force shall prove ascendant; then does it softly yield its trusted heritage of vital wealth, and sink again into the realms of night.

And so the living present, firm-rooted in the past, grows within its atmosphere, takes on local coloring of identity, fulfills its ordained rythm of growth, condenses its results, and, waning hour by hour in all that marks its physical, mesmeric presence, fading in the inevitable twilight, it too becomes in turn a stratum of the fertile past.

And so does the individual enterprise, the individual far-reaching purpose, the individual transitory emotion, the individual triviality and incidental, fulfill each its rythmical allotted part, and pass away.

By how much and in what way the penetrating roots spread through the soil, grasp and absorb from it, by so much, and in correspondence, will the topmost branches tower, move with individual peculiar sway in the storm, rustle likewise in the breezes, or stand superbly, calmly silent.

By such virtue of limitation the lily nods in aromatic luxury, a proud weed overtops the timid violet.

How grand and self-sufficient seems the forest monarch, how fair the lily; how ardent is living personal desire, how lily-sweet true sympathy; yet the subsidence and withdrawal of vital sustaining elements comes not more surely to one of these than to the others; unto each in normal time comes the ineffable serenity of dissolution, whose outward sign and garment is decadence.

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When brewing tempests sounds a knell, who shall survive? The destroyer comes! Fearful its fury!

Afar at sea the angry waves engulf a bunch of pallid mortal specks. They are gone! with all their tiny hopes and fears. What are hopes and fears amid the raging elements, more than fantastic and circuitous sparks blown by the night storm from the chimney's throat to glow a troubled instant and vanish into black oblivion?

And in the surging forest, the tortured giants roar in such frenzied chorus that the exalted soul quakes at their awful music. In the intermittent glare the eye gloats on their huge resistance. A blinding flash! The instant deafening rattle and malodorous sizzling air. A hush! a frantic shattering roar, a prostrate growth of centuries, a mighty one laid low. Yet what is the forest, the labored and accumulated growth of years, but the plaything of the storm? And what is the total life of the forest more than the life of the human speck, or the spark, or the race, or the flitting smile? Each and all playthings of fate, momentary justifications, transitory trifles, great and wondrous only to the great and wondrous heart of man whose sympathetic soul envelopes them and draws them nigh, and interweaves them with its own catastrophe and bliss.

And when that heart, that soul, shall sing in duo, shall find a full, eventual expression, bursting into full-blown ecstasy of metaphor their rich and varied language shall tell a thousand thousand tales wherein the blended themes of life and death shall intermingle with our smiles and tears, wherein the limitless reality of nature and the limitless illusion of the heart shall coalesce, wherein the soul of man shall tell of Nature's soul in hymns of life, and yet wherein shall sound, responsive, murmuring in a gentle undertone, the constant, solvent song of death.

To death then, hear a hymn:——

Now crafty and concealed, now open jawed and furious, now bland and sophistical, void of form yet multitudinous in seeming aspect, patient of opportunity, certain of the final outcome, present everywhere, pressing against each individual life—testing it always and everywhere, gaining a little, losing a little, utilizing every means, missing no opportunity, pressing the whole surface and interior of all life, thy active resistance continually meets that ceaseless, aspiring force, while in tranquil depth thou dost simulate the soft, preliminary sleep of every germ.

Of many moods, all-devouring, insatiable, enormous and sinister, sublime, vast and terrible, to Thee, alike the vanished morning mist, the holocaust, the gurgling rale, and endless series of forgotten years, unnumbered longings, individual twinklings—Thou, Great Denier, hast gathered them in—and they are not!

Before the soul, comes pleading, self-justified in innocence, soft voiced and heartful, a beauteous bewitching form claiming, open-armed, expostulate, its individual dower of life. The soul, attentive, entranced, ecstatic, would overflow in plentitude of instant, ardent love, but thy inexorable form arises, and with unspeakable gesture thou dost spread an answering darkness that envelopes all.

And thou dost ride upon the agitating storm, thou sett'st a brake upon the coursing planets, thou art with the glorious meteors erratic through interstellar space, thou hast touched the burning suns and they are cooling; thou art with the microscopic crawling mite—following inseparably its earnest quest, looking through its minute eyes; thou speak'st with every mortal breath, and art resident in brighest smiles; thou art within thyself, thou fearful shade, and hast thine own great death.

More tenuous than air, more steadfast than the stars, harder than granite rocks, more mobile than running waters, variable and elusive as the winds, thou art beyond our touch, imponderable, yet definite and real as shadows.

Thou art the reactionary cause of every change, without thee there can be no palpable or seeming growth, no sentient being; thou art the everlasting and sublime companion of all life; thou art the eternal shadow cast from things mortal by the eternal light.

In catastrophe, O power sublime, we know thee dread, yet in solitude of meditation I view its fury as thy comedy and by-play; but in decadence, in peaceful subsidence and dissolution thou art so tragic that the soul spontaneously believes thee friendly, adorns thee with a name, and holds thee precious in its sight.

INTERLUDE.

When from well-springs bubbling to the light in mystic dell, there flows a crystal rivulet gladsome and free, cradled by fresh mossy banks so lovingly tender, lulled by the twitter of birdlings and murmurous balsamic breezes, the sunbeams curiously peer through the leaves at its smiling, innocent face, and wish it joy.

Soon joined by rippling little ones who sweetly give it their all, it welcomes their tribute, and wantonly runs to the open meadows and alternate wooded reach.

Here sequestered 'mid high grass and shrubs, it gurgles, and crows, and fattens; then turns hither and there with sinuous curve, sings soft cadenzas to the intercepting stones, and hastens on to leap in burnished cascade from the ledge.

Anon it grows in dignity with each succeeding token from the confluent streams which, mingling with its genial flow, add their qualifying mites of tender power, abstracted from perhaps desolate or, it may be, verdure-laden hills, the porous strata, overhanging rocks;—and wrought on by the alternating influence of storm and sunshine.

With mingled persiflage and serious undertone, growing ever in earnestness it flows through rich diversity of landscape, spreading out at times to rest, in quiet sombre pool or solitary lake.

Thus grown and quieted it now moves between yon tacit banks which slowly individualize at each encountered bend and seem to hold their counsel.

One by one the larger tributaries in turn converge upon this widening stream and pour their inflow of rich abundant waters—slow-moving messages from many lands.

The banks widen apart, become serious and broad of aspect, assuming each unto itself a separated and less kindly mien:—sandy bluffs rising to beetling cliffs, severely wooded hills, the austere forest coming to the water's edge:—whence all cast images of their restraining will and purpose on the receptive breadth of the current moving now in affluence and majestic ease.

The river-bed diversifies, shoals, snags, islands, soon irritate the current which sullenly yields to corrode the opposing shore.

The channel deepens, is fugitive, tortuous, lurking with engendered passions, and ever less friendly to the less friendly and receding shores.

Grown avaricious of power, tributaries large and small are swallowed up. Jealously the banks multiply their strength, each one for itself, grim, determined, serious. Alike to all are storm and sunshine, the slow succession of the seasons, moon and stars, the grand each day arrival and departure of the sun; they but take on a fleeting color from these things, and remain, themselves, preoccupied of their own destiny.

Increase and sombre intensity, culmination close by the limit; deep, broad, and still; high, firm and still; divided, inimical, one and inseparable, great river, great banks—(Behold here the delta!) disdainful, fierce, haughty, descend to the sea, and with measureless pride are lost in the depths.

## PART III.

THE INFINITE.—A SONG OF THE DEPTHS.

Many a thought lies dormant in the sea;—exchanging secrets with fortuitous winds, free with the driftwood and the birds, yet sealing close its thoughts to thought-proud man, the vast sea broods and effuses ever, yet as I know, unspeakably, imparts with freedom only to the native one who equals it in elemental turbulence and serenity.

Deep-throated sea! sing to me now in occult murmurs, in rushing tumultuous plunging cadenzas, a song, an entrancing song of the Great Spirit; for here I sit impressionable, super-intent, and wholly given up to thee, to listen and to ponder.

The morning sun, young and blushing, o'erhangs thee, glancing ardently. I see his image pictured broken and glittering on the waves. So do I o'erhang thee, mighty one, yet where may I find the image of my ardent soul, where may I hear the arcanum unfolded:—the song of the depths, the song that shall attune harmonious and amplifying to the song within,—the questioning song, the unsatisfied song of the twilight.

The salt breeze, quickening, moves swiftly as the passing sea-gulls. Harshly they scream. Yet shall my thoughts ever circle and swiftly wheel in hunger over thee when the sea-gulls are fed?

In vain I sang with the jubilant springtime, inhaling balsam with the flower-laden air. It departed in sweetness, leaving me perplexed.

In vain I shuddered through the rustling depths of autumn's slow decay. That which I sought eluded me as before!

Here, then, in the simple air and by the simple water lies my refuge and my hope. Deny me not, for I am come as one nearing his journey's end; as a traveler at eventide, here must I seek final nourishment and rest.

For there must somewhere lie beyond this complex phantasm, beneath this eagerness of growth, this upheaval and fatuous endeavor, beneath this sorrow-laden, inextricable fatality of subsidence and decay, that which stands to them as water to the waves: deep, fluid, comprehending all:—bearing quiescent and passionless this endless agitation, this fascinating to-and-fro. Else why, as I tarry here expectant, am I so persuaded by the heavy rolling roar and subsequent gurgling thin-spreading swash and laconic return of the green transparent waves? How exultingly they rear

and curve, how they plunge impulsively upon the sloping sands! Yet in a moment they return—inevitably and swiftly they return.

Clear blue and crystalline the firm sky arches overhead. My buoyant craving darts vividly upward, in instant search; to instantly return: resolved to learn all from the friendly sea, so tangible, so near at hand.

Sing jubilate, turbulent sea! Of all things that the crowded universe contains thou art nearest like the human soul. For in thy very self, thy liquid depths and shallows, thy lightless and unfathomable depths, thy restless surface waves and currents, impressionable, incontinently shifting and changing, in thy very self unquestionably I see, with wonder and amazement I see near by and luminous my soul's inspiring image which I sought.

And as my soul with joyous ardor gazes on that image pictured softly in thy depths, so thou seem'st to rest, in secret stillness, brooding o'er a wonderously reflected image—image mobile and serene beyond compare.

Yet, alas! though fervently I conjure thee, still remains inscrutable that rare reflection, hiding which, thou smilest calmly toward me, evanescent smiles of billowy waves.

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My backward turning thoughts recall the sorrow and illusion of my days:—How, earnestly, Inscrutable, I struggled through entanglements unending, searching deviously amid perplexities to find thy abode; prying with sharp-pointed thoughts, testing with the delicate touch of the heart, yet heeding not sufficiently, trusting not at all the simple promptings of the soul which spoke to me often as the sea now murmurs; but it spoke not in a language that I knew, therefore I heeded not its tender voice, which died away 'mid the rising clamor of random words, to lie, overridden and hushed—dormant for many a year.

Patiently I sought thee, yet preoccupied I passed thee by in my haste, believing I would find thee yonder, where the alluring rainbow of my thoughts so gracefully ascended.

Where I saw power I looked beyond for greater power; where there was storm and stress, I peered out anxiously toward turbulence sublime; when in dismay I gazed on death in many forms I questioned closely if beyond this lay an answer:—yet all these disconnectedly, with manifold obliquities of view.

Once, after hot pursuit along a sinuous trail, I called thee long and loud by many names: thou didst answer, but I, alas, mistook the murmur of the winds for commonplace, I heeded not the drifting odor of the woods, nor marveled at the nearness of the mossy bank whereon I lay me down to rest:—prostrate that my labor should remain without reward:—drawing over me as I sank in fitful sleep, a coverlet ingeniously contrived of self-spun gossamer, subtly shuttled through and through by dexterous guesses, consummately resplendent with the dazzling embroidery of long transmitted thoughts.

In pride of thought I sought to seize thee deftly, as one seizes with an instrument; I sought to snare thee with a loop of words; to trap thee in arctic zones, as a trapper setting his falls on the bleak and lonely winter wilds. Yet all in vain.

Furious, I went by night, malignant, to glean an answer from the storm o'ershadowed sea. Foreboding winds were shrill with angry warnings. The ancient bowlders, heavy with odorous wet weeds, gloomily offered their support. Athwart the overcast and threatening sky the moon pushed rapidly from cloud to cloud, fitfully pouring her clear fresh light between, flooding the mysteriously approaching waves with shifting throes of shine and dark:—whence equal light and gloom within, sullenly revealing and obscuring dim far off undulating hints of unison, mysteriously approaching harmonies, modulating weirdly through the swell and subsidence toward tangible identity of sea and soul:—identity trembling here, now, in the awful hush before the storm, trembling in suppressed and vaguely lurking throes of consummation.

Lurking and trembling the lurid distant lightnings waver on the edge of the sea. In vain! In vain! The soft light disappears in murky night. No moon, no peaceful star. Hoarsely the wind-driven sea plunges furiously on the rocks. Enraged, and flashing through the sky, deliriously sweeps the fearful hurricane, swirling the rain sheets, unloosening the thunder.

Elohim! Elohim! In utter darkness I! In vain, Inscrutable! Thou wert more near than my unhappy soul's desire was to itself, yet art Thou far off and unreachable as Thyself alone.

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So fares the sea in rocking storm. So, tempest-tossed, I too abate, and balance with the measured swell, while storm clouds drift away, and heartsease, storm-abandoned, rests beneath the glory of the breaking day.

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Clear morning light, refreshing air made vocal by the dashing spray, the neighboring beach low-spreading and withdrawn, compose my thoughts in strains akin to theirs which issue from the surf as jetsam from the wreckage of my hopes.

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Deny me not, O sea, for I indeed am come to thee as one aweary with long journeying returns at last, expectant, to his native land.

Deny me not that I should garner now among the drifted jetsam on this storm-washed shore, a fragmentary token of serenity divine. For I have been, long-wistful, sitting here beside thee, my one desire floating afar on meditation deep, as the helpless driftwood floats, and is slowly borne by thee to the land.

Deny me not that now, awakening, as the spring awakes from mystic fleeting winter sleep, that I too may sing in tones rejuvenant yet softened by autumnal memories, in tones that shall have deep within them the thrill and intent of thine own native song, that I too may sing, as thou singest ever, a song of the depths, a wordless song of the near at hand, a song of the ardent present, a song of the vanished past, an inspiring song of the future:—the gladsome song of the soul at one with Inscrutable Serenity.

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All hail, sublime serenity! Thou answerest the questioning heart, thou sendest peace and guidance to the striving soul. Thou art the voice of the morning lark, thou art the power whereof it sings, whereof we also sing and dream.

Wondrous thou wearest springtime-life and ecstasy upon thy brow, while watching, tranquil, by the grave.

Thou art the lark, thou art the falling leaf; thy breath is the breath of flowers, thy voice is sweeter than the zephyr, deep, below the rumbling storm.

Thou floatest with the swallow at evening skimming the surface of quiet waters:—over the placid soul thou likewise comest as a delicately fleeting thought at the hush of day.

Raging catastrophe is now as a silence wherein the hungry voice of fate is heard as wolves are heard at night in the depths of the forest.

Whence the wail of decadence is to me as the silence of caves, wherein thy voice is heard resembling the dripping of waterdrops in the stillness.

Thou speedest thy rays to the sun, thou art dawn and twilight to the universe.

Life and death are as dreams of thy slumber; thou breathest and the seasons come and go.

Yet thou art near as the flowers of the field. To their lovely companions within the heart thou comest as storm and sunshine interblended with the melodies of spring.

I am sure that thou art very far and very near and round and about me, yet all that I may know of thee comes of the fragmentary token which I gathered on the sands by the sea.

But I know, best of all, that this token, once found, takes root in the soul as a seed that is dropped into virgin soil.

Through lesser springtime expanding its course doth lie to unfold 'mid the greater unfolding growths, to become in turn of nature's chosen, bearing joyous flowers and labored fruits in its onward course, impelled by the steadily inflowing currents of rotating seasons:—And I know 'tis by these fruits alone that the token is transmitted.

From this summit and consummation hence to decline as the sun declines in splendor from the zenith, merging with the roseate and gathering clouds, sinking tranquil through their midst, I know indeed that to thus depart in splendor as the sun departs is the final announcement of this token of serenity:—announcement echoed in the twilight by soft evening chimes from remaining hearts, denoting peace in the realms of night.

Over all, as a beautiful memory following deeds, arises 'mid soft refulgence the mellow companion, the moon, chanting softly a song of endearment, a token-song to the great departed, a song of the depths, a song near at hand, harmonious and amplifying to the song gone hence, a song of inspiration.

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And thus my song, declining, now sinks to its rest through the peaceful sky. Whereafter prolonging thought arises, following close, as a harvest moon, shining with milder, reflected light.

The thought that dawn, noon and twilight are ever linked with the coursing sun; that invisible tomorrow is even now its gliding companion, and will appear with it anon, dawning our day in urgency.

Whence I believe that action thus ever attends on flushed and procreant purpose, continually mounting with it toward the shifting summit of desire.

Without the sun, no dawn; without sustained desire, no fruitful or efficient action.

The thought that from such desire emerges art as action.

The thought that tallying such desire, (native, widespread, and unawares), appears the art of a nation: dispelling the gloom in its dawn:—whence works awaken imperceptibly, like a tinge of green upon the land, rejoicing in their lesser springtime gladness.

Through speedy decadence the weak are denied; surely the autumn nipping winds dispose of the loose and tremulous, leaving the hardy sound.

How quickly the lesser seasons change! How, manifold and numerous, they ever turn involved in the greater and broadening rotation of growth and decay. Yet how tranquilly beneath the tumult and silence persists a hidden power, mysterious, inscrutable and serene, qualifying imperceptibly both growth and decadence, leading both, sustaining both, denying none, while through the lesser and greater unfolding springtimes, the tide of destiny ebbs and flows with mysterious undulations, working freely, through marvelous rhythms, toward subtile and tremendous consummations—consummations balanced in the end by a noble decay, and the sweet oblivion of death. Whence comes the strangely complex thought of rhythm—for all is rhythm.

The thought of attuning the rhythmic song of art harmonious and amplifying to the rhythms of nature as these are interpreted by the sympathetic soul: that herein lies a vital purpose and significance of art.

That to arrest and typify in materials the harmoniously interblended rhythms of nature and humanity, sustained and permeated by an essence wholly inscrutable, yet manifest as wondrously elusive mobility and abiding serenity, indicates the deepest inspiration and the most exalted reach of art.

The thought, that to perceive the material workings of this mysterious essence as the power underlying all growth and decadence, requires that the senses be highly spiritualized by the mobile, serene and sustaining influence of the soul.

That to attempt in cynical pride to seize this essence deftly with the mind as with a delicate instrument, or by conscious strategic methods whatsoever, is illusory and utterly in vain.

That a reverent attitude of the mind is equally in vain.

That it is not at all an essence for the mind to deal with, but for the soul to deal with; and this alone with the help of exquisitely vital sympathy.

That the mind speaks in terms of logic, which is vital, yet conscious and secondary; but that the soul speaks in terms of inscrutable intuition which is involuntary, vital and primary.

Whence the thought that the greatest art is at once the most and the least thoughtful—that logic and intuition are therein marvelously interblended.

That moments when the soul loses the identity of conscious mind and merges with the infinite, are moments of inspiration.

In tranquillity of meditation the soul unites with nature as raindrops unite with the sea; whence are exhaled vapors, under the hot and splendid

sun of inspired imagination, vapors rising through the atmosphere of high endeavor to drift away in beauteous clouds borne upon the imponderable winds of purpose, to condense and descend at last as tangible realities—sometimes in gentleness, sometimes in sombre fury, as the rotating seasons call. Here they nourish and refresh, and amid untold vicissitudes and metamorphoses, return at last to the great sea of Nature.

Whence the dominant, all-pervading thought that a spontaneous and vital art must come fresh from nature, and can only thus come.

That the specters of departed and once spontaneous art growths, which arise from their natural graves and walk abroad clad in tenuous garbs, like other phantoms and mock realities, must vanish with the dawn of artistic vitality.

That such a dawning is close upon this land there can no longer be any doubt. In the paling gloom the phantoms flit about, uneasy and restless, losing identity. The heavens are faint with the glow of a new desire; and with overflowing heart I rise through the mists, aloft, to catch a glimpse of the coming sun, and carol this prophetic song of spring.

## Architectural Freedom.*

BY JOHN W. ROOT, ARCHITECT, CHICAGO.

No thoughtful student of architectural history can fail to congratulate the profession and the public at large that the day of architectural freedom has at last fully dawned.

The night has been long and cheerless, heavy with the groans of weary watchers waiting for the day. Ages have passed since the first faint glow upon the hilltops told that morning was nigh. But now from every rock and crag, from every hill and housetop, from every face and in every glad voice, is reflected the brightness of the newly risen sun.

To us, basking in the glory of this new day, the darkness and danger of the night just passed seems almost a fiction, but when at rare intervals we realize that it was not, our hearts are wrung with pity for the vast throng whose lives flared up and flickered out in vain endeavor to pierce the gloom.

It seems unutterably pathetic that in these dismal dungeons of night so many great men should have beaten out their souls, bowing their necks meanwhile to yokes the most intolerable; yokes of tradition, of precedent, of arbitrary and iron law.

To us who stand free and upright it seems impossible to estimate the vast change that has come; and yet we cannot fully realize the greatness of our own good fortune without striving to feel something of their misery, shedding, as we pass by, a tear of sympathy upon their hapless graves.

Let us, therefore, go back into the dim past and there search out a few of our professional brothers who spent their lives beneath these cruel tyrannies. In all other ages than our own, the architect has been unable freely to follow his own judgment or inclination, because of a vast number of purely arbitrary laws which met him at every turn. These, like the traditions of the Pharisees, came from darker ages, and, growing with each year, they, vine-like, encircled and choked the fair tree of true architecture.

Some of these laws were of almost inconceivable severity and impertinence. Think of a law which compelled the architect to design all columns with a fixed relation of height to diameter; all entablatures with a fixed height in terms of the columns beneath them. Among the Greeks the columns must moreover have certain well-defined peculiarities of form, and the entablature certain equally well-defined adjustments of its three parts. No Greek architect was allowed to place the cornice at the bottom of the entablature and the architrave at the top; nor to group the cornice and architrave beneath the frieze. Nor was he permitted to place the columns above the entablature, nor to erect the columns with their capitals at the bottom and their bases in the air. Greek tradition was so exacting as this.

Greek historians narrate that when the Parthenon was done, there was in Athens a man named Apollodorus, whose chief work was the designing of smaller habitations for the people. This Apollodorus, being one of the most enthusiastic admirers of the Parthenon, proceeded to build all over Athens a hundred little houses just like it. He built them of wood; he built them of clay and of cement; he made them of greenstone, of blue and of red. The metopes contained "ornaments," sometimes of beasts and birds, sometimes of flowers, but most generally of mere things. Just ornamental "ornaments."

Ictinus and Phidias bore this sort of thing for some time, because it seemed undignified to complain to Pericles. But one day, emboldened by past success, Apollodorus built a new house on which he erected the two end pediments after the Parthenon, but put a flat roof of tar and gravel between them. This, not only Ictinus and Phidias, but also Pericles himself, and all the people of Athens so resented, that Apollodorus was banished the city, and all his goods confiscated to erect a temple to the god Hermes.

The Romans, though in general much more tolerant than the Greeks, were scarcely less tolerant in relation to their architects.

It is stated that so humane a prince as Augustus ordered a Greco-Roman architect to be swathed in cloths saturated in pitch, and to be then burned, because he had built in Brundisium a house, all of whose windows had their arches at the bottom and their sills at the top.

So also you remember the scroll found at Herculaneum, which narrates the sad fate of the architect Tuticus, who built the house of Pomponius, the board of trade man.

Tuticus designed this house so that all the windows upon the front were shaped like large keyholes—an effect which must have been striking, though difficult for us to realize. When the house was completed, all the art critics of the day arose and made a great ado, and for some time the architect's life seemed in danger. At last the tumult subsided and all seemed over, when, one stormy night, Pomponius, the board of trade man, came home from the weekly meeting of the Knights Templar, and mistaking a window near the ground for the keyhole of the door, tried to let himself into the house by jabbing his key into the window. Then the infuriated populace rose to a man, and tore the unfortunate architect limb from limb.

In later days, in mediæval Europe, we find the same absurd laws and prejudices.

One incident, handed down to us in an old missal now at Vienna, shows that as late as 1266, it was insisted that so absurd a law as that which placed the battlements of the house at the top should be vigorously enforced.

The Count Walter of Limburg had commissioned Otto von Sweitzercase to build for him an addition to his castle, in the shape of a great round tower. Now Otto had been a draughtsman in the office of Gerard de Von Trond, and also with Wenzel of Klosterneuberg, and, according to his statements (draughtsmen being much the same in all ages), had designed all the "essential" parts of the Cologne and St. Stephen's cathedrals; so, by the time he got ready to "start for himself," he had, in his mind, been emancipated from the thralldom of all the traditions to which Gerard de Von Trond had so servilely bowed. He therefore conceived the notion that the new tower would look "real nice" if a very richly carved and macchicolated cornice were put about its base, like embroidery about the things which on men are by the vulgar called "pants."

Walter of Limburg, being a wise prince, had not bothered the architect much, and had not decided, as so many people do now, to live in the castle while the improvements were going on, so off he went, having lots of fun drinking, and fighting, and swearing when the architect's certificates reached him, till Otto told him the tower was done. Then he got unusually drunk, and came back. One glance at the tower, and the haughty prince fell back shrieking in the choicest Latin: "I've got 'em again!"

Next morning the great Otto Von Sweitzercase laid his head on the block.

Later still, in France, architects as able as Otto, fell victims to the prejudice of the time.

In an able paper published in 1884, Monsieur Jules Delibes shows that the notorious man in the iron mask was an architect, a certain François D'Erehomme. To him Louis XIV intrusted the designing of a wing to "Grand Trianon." Poor Monsieur D'Erehomme was puzzling over the design, worried by the fancied necessity of creating something entirely new for Le Grand Monarch, when the pencil he was using slipped, thus accidentally producing a form which, for a window, Monsieur thought quite too enchanting. This window he used with great freedom on the water front of the chateau; but alas! The capricious monarch was not pleased, and the iron mask was the end of it all—the iron mask and one high window. As Louis cruelly said, "He shall during his life see but one window, and that window he shall not be able to see through."

Passing backward to England at a little earlier time, we find in Samuel Pepy's diary, a charmingly told story of Nell Gwyn and Hugh May, the architect.

September 20.

The king seeing me this morning at Whitehall, whither Sir W. Coventry and myself had gone from a game of pêle mêle, spoke to me of the new garden house he had built for himself. But, Lord, I did know by his smile that it was for that pretty, witty Mistress Gwyn to live in. His majesty said that to Lord Teviott he had intrusted that he should plan a fair fête champêtre for the day when the house should be complete, and his majesty bespoke both Sir W. Coventry and me that we should attend upon that day, at which I was exceedingly glad.

September 22.

By water to Kew, and thence to Hampton Court, singing many catches and glees most merrily; and Lord, how foxed Sir W. Cateret did get, and only eleven of the morning.

Arrived at the court, we did find my fair Mrs. Batelier, to whom I made many pretty speeches, and whom I kissed many times—may the Lord forgive me!

Mistress Nell Gwyn went with the king, and all of us following, with Sir W. Batten and Sir W. Pen, and a most merry party.

The king had not seen the new house, nor had Mistress Gwyn, and when we came in sight of it, there was Mr. Hugh May who did plan it.

Then Mrs. Gwyn, when she saw it, fell a-laughing and crying till we all thought she had a fit; and at last she says to Mr. Hugh May: "What aileth the house? Some evil hath, perhaps, befallen it! It seemeth all twisted and awry."

Then said Mr. Hugh May, very soberly: "No evil hath befallen it. It is well and soundly built." "Aye," replied Mrs. Gwyn, "But of what style is the architecture of the house?"

"Queen Ann, your ladyship," says Mr. May. Then we all fell a-laughing most heartily, but Sir W. Cateret, being well foxed, was exceedingly wroth, and beat Mr. May most soundly till we all did interfere lest the man be grievously hurt.

Where Hugh May got the name Queen Anne I don't know myself. Perhaps he got it from THE INLAND ARCHITECT.

One more instance from our own country will show that even as late as 1794 architecture had not yet become free in that perfect sense in which we understand freedom.

In a letter from President Washington to his agent, dated April 16, he writes:

By post of yesterday I am in receipt from you of plans prepared by Mr. Stevens for the renovation of my house at Mount Vernon. You will express to him my unqualified surprise that he should have supposed me capable of accepting designs so indecorous. That I who have endeavored to live free from blame in the eyes of my fellow men, and with the approval of my own conscience, should be thus considered by a man in my own employ is beyond my comprehension.

From the drawings before me, the pillars of the portico seem to be connected by a device of curving and irregular form, each side of which is different, the whole being filled in with small balusters like the stair railing within the house. The end gables also of the house seem to be adorned with all kinds of fragments of wood, cut into strange and meaningless designs.

I cannot fully comprehend the divers curious forms in which he has cast the windows. They seem to be in all respects different from such as are shown in the established works upon architecture.

Pray tell Mr. Stevens for me that after my retirement from the cares of the high office I now hold I expect to return to the privacy of my home and to reside at Mount Vernon. Therefore I do not wish to deserve the anger and just contempt of all my neighbors, nor to be in the state of Virginia a perpetual derision and by-word.

I will neither accept his work nor pay him a dollar for the drawings which you have sent me, and if in any respects the works upon the house have been executed, he must remove the same, under penalty of legal process against him for damage.

Thus you see how many and how painful were the restrictions laid upon architects in all these different ages, and what ignominy it must have been to be an architect, a practitioner in this noblest of high arts, when every step was taken with the feet thus clogged by galling chains.

* Read at a dinner of architects at the Union League Club House, Chicago, November 18, 1886.

We, living in the full light of the nineteenth century, freed from the thralldom of even our less fortunate brothers across the sea, we men of the Western Association of Architects can do what we please.

For us no Jove thunders on high Olympus; for us no bloody despot wields autocratic power; for us no ignorant peoples grovel in the beaten paths of their own superstition. This is the age, and this the country of the great architectural go-as-you-please. I know of but one grave difficulty which besets us. This is the answering of the question, so constantly asked, "What is the style of that house?"

All of the old styles known in the books are obsolete or obsolescent, and yet we still use their names. Why should we not frankly accept the actual condition of things and name our own styles. No one man may hope perfectly to do this; but I trust you will pardon a single, if only a feeble attempt, provided it be in the right direction.

Looking then back over the last twenty years of architectural development (for it is in the short space of twenty years that we have burst the last bonds of slaves), the first style which will rise up and demand a name will be what we may call the "Victorian Cathartic."

This you will all readily recognize. You can see it in full flower in the London law courts. It came upon us all in the time of our virgin innocence when architecture seemed the vale of pure Arcadia, and Ruskin was its prophet. Seduced by the blandishments of this new Renaissance, we yielded ourselves easy victims to its sway, and since that fateful day what crimes against Beauty and Truth and Power and the rest of the seven lamps has it not led us to commit.

"The Victorian Cathartic" was too true to be good, and too good to be true. As long as its method of production remained secret (in the category of other patent medicines) it had a great and ready sale. But when some too trustful architectural chemist or some too inquisitive lay patient found out the formula, the sales ran down to nothing.

Then came the "Tubercular Style," sometimes called by the facetious "Queen Anne." This style is characterized by two sorts of eruptions, external and internal. It has for a long time held us in more or less complete control. Sometimes, when it looks as if we had got it out of our systems, it breaks out with new violence; and the troublesome thing about it is that no man can say where or in what fresh form it will manifest itself. Viewed externally, you will recognize this style by its varied and highly colored eruptive features. Generally the affected house is red as to the scalp, with a complexion of all colors, from cobalt blue to saffron yellow. Its eruptive tendencies manifest themselves in all sorts of things, from wens to carbuncles and ringworms.

In its interior manifestations the Tubercular style often takes still stranger and more alarming forms. The house becomes, in its various functions, most strangely disarranged, and the various organs undergo the most extraordinary enlargements and contractions.

I have seen Tubercular houses in which the heart and liver were so changed from their normal sizes that the hall was big enough for a castle, and the attending servant couldn't pass around the table when the family were at dinner.

Yet, it is singular that the history of medicine records the case of no man who ever died of a Queen Anne or Tubercular house.

Then there is the Cataleptic style. This is supposed to have originated in New England, in the last century. It can be recognized by the careful suppression in its external aspect of all that would indicate life. In general the house looks like a hard-featured Puritan at Meetin',—only more so. Viewed internally, it is so white and bloodless as to be strongly suggestive of a prolonged cold water diet.

A style of work now in very common use and called the Romanesque might often be more properly called the Dropsical.

Here you note a general enlargement of all the members. The roof especially becomes greatly distended and very heavy, and the whole middle of the house is so swollen as to plainly indicate the nature of the disease. In detail each member partakes of the generally enlarged type, and as a natural consequence of this enlargement, there is a tendency to obliterate all angles and corners, creating instead rounded and protuberant surfaces.

Many other names applicable to styles of architecture now in vogue will suggest themselves to all of us, and under each of the general names I have suggested, many minor classifications might be named.

It is also true that where such wide freedom exists, the difficulties of general classification are greatly augmented. All that I can hope to do in a sketch like this is to convey a hint, which I am confident you will be swift to act upon.

A committee of architectural nomenclature might do much. I devoutly hope that by conference between ourselves and the American Institute we may in some way bring about the revision of this question.

As it stands, architectural nomenclature is a delusion and a snare.

## Proportion of Joints and Connections in Framed Structures.*

BY S. G. ARTINGSTALL, CITY ENGINEER, CHICAGO.

THE details of construction in many cases are neglected, and do not receive the care and attention which their importance demands. Many structures otherwise strong are extremely weak in detail, owing to faulty construction or careless design of the joints. The joints are generally the weakest parts of iron construction. They should be proportioned so as to resist every direct and indirect stress which may come upon them under all probable circumstances, without subjecting the material to a greater strain than is legitimately allowed. The strength of a structure depends largely upon the proper proportion and distribution of material in the joints, and no amount of metal in the body of a member can compensate for a deficiency of strength in these parts.

Riveted joints and connections are subject to injury by tearing the rivets through the plates, when the bearing surface on the plate is too small, and by shearing the rivet where there is too low a rivet section. The first condition is very often neglected or entirely overlooked in many designs, although generally it will determine the size and number of rivets to be used, and often tend to an increase in the thickness of the plate. The pressure usually allowed upon rivet bearing is 15,000 pounds per square inch, and the bearing area is the thickness of the plate by the diameter of the rivet.

Shearing is produced by sets of opposing forces acting in the same or parallel planes, and for iron is usually taken as equal to its resistance to tension (in a well-proportioned tension joint the collective shearing area of the rivet nearly as effective as the area of the plate after deducting the rivet holes) but in riveted work perfect accuracy is seldom obtained, and in consequence there is not perfect uniformity of strain among the rivets; in many cases the holes do not coincide, and the iron is distorted and injured by the improper use of drift pins, instead of being reamed out and larger sized rivets used. If the rivet is too short the workman will not scruple to use them. They are more easily put in when the rivets are heated only at the point. They do not require quite so much hammering as when heated throughout, but then they do not fill the holes, and may even be loose; do not fancy they will be cut out on this account. The workman can make them appear tight when they are cold. Rivets treated in this manner will not remain tight if the structure is subject to much working. These little items, which go to make good work, can alone be detected by a competent working inspector on the ground.

By these imperfections some of the rivets are scarcely strained at all, while others are overstrained. Even with the greatest care, loose rivets are not uncommon, and perfect workmanship cannot be relied upon. On account of these defects the shearing value of rivets is usually taken at 7,500 pounds per square inch, when the value of the plate is 10,000 pounds.

The distribution of rivets in connections or splice plates, particularly in tension, require careful attention. They should be arranged symmetrically with reference to the axis of each bar, and the members weakened as little as possible by rivet holes.

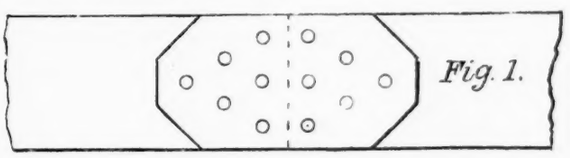


Fig. 1.

In fig. 1 a single hole counts for the weakening, and the useful working section is equal to the section of the bar less the diameter of one rivet hole, the strain in the bar is diminished by the amount transferred by the first rivet to the splice plate, and although the section of the bar or plate is reduced by each succeeding row of rivets, the unit strain is not increased. This condition holds good when the number of rivets in two adjacent rows does not increase by more than the number of rivets in the first row.

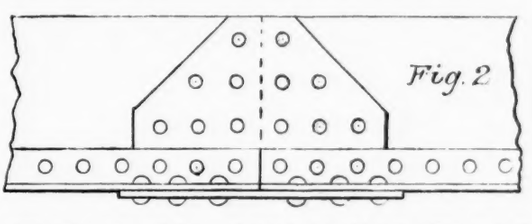


Fig. 2

When the section of the member to be joined is not uniform as in the case of an angle riveted on one edge the arrangement is modified so as to keep the center of the line of rivets as nearly as possible equidistant from the center of gravity of the section otherwise the rivets will be strained unequally. The first rivet in this case is placed near the lower edge of the plate instead of near the center as in the first example.

The question as to whether the holes in connections must be punched or drilled ought to be determined by the designer. In each case if the holes are located near the edge of a plate or the quality of the iron is poor it is liable to be seriously injured by the operation of punching, but it can be drilled without injury. When a number of plates are to be riveted together or a difficult connection to be made it is better to use drilled holes unless unusual care is exercised at the punching machine, drilled holes should be slightly countersunk to remove the burns which will cut into and injure the rivets.

For connections and splices, both in tension and compression, it is advisable whenever practicable to use double splice plates. When a single splice plate is used in tension a couple will tend to bend it and spring the rivet heads, and single plates in pieces under compression are liable to crippling at the joints.

As the splice plates must receive and transmit the full strain of the member joined, its useful section must be equal to it. Generally double plates require to be but half the thickness and require but half the number of rivets as they are in double shear. The length of the splice plates also diminish with the number of rivets so that double plates are economical. The strain from the member is more uniformly distributed among the rivets, the less the number in the direction of the strain, since the stress of an abutting piece is transferred to the splice plate by the rivets, and the rivets on each side of the joint have to bear the same shearing strain as the strain upon the plate, the loss from rivet holes in the splice plate is equal to the number of rivets in the row adjacent to the joint in the case shown in fig. 1, the section of the splice plate is reduced by the diameter of

* Paper read before the third annual convention of the Western Association of Architects, at Chicago, November 17, 1886.

three rivet holes, while the effective section of the bar is reduced by the diameter of one hole only, hence, the necessity of making the gross section of the splice plates somewha tgreater than the sectional area of the member. Stoney recommends that single splice plates be made one and one-eighth times the thickness of the bar, and double splices each five-eighths the thickness of the bar.

For compression members the disposition of rivets in connections may vary somewhat from the rules given for tension joints, it being assumed that the strain is transmitted direct and that no loss is occasioned by rivet hole, when the workmanship is perfect, if the abutting joints are planed or dressed so as to afford a perfect contact throughout a simple plate with sufficient rivets to keep the members in position would be sufficient, but perfect workmanship cannot always be relied upon, and a close contact throughout the whole width of a plate is rare. The process of riveting tends to draw the plate slightly apart, and a small interval is theoretically as bad as a large one so that it is often better to assume that the strain must be transmitted through the rivets and splice plates, using the same values for bearing and shearing as in tension; but greater latitude may be allowed in the distribution of the rivets and neglect the loss occasioned by rivet holes.

PIN CONNECTIONS.

The efficiency of the riveted joints of tension members will vary according to the design, but it can rarely exceed 80 per cent of the strength of the solid plate, and hence it happens that the section of these members is increased in consequence of the loss from rivet holes by not less than 20 per cent to the theoretical weight of a tension member: that is, its section calculated on the imaginary hypothesis that it is made of solid iron, without joints or perforations. The size and length of the splices or covers is considerable, and their weight an important addition, in many cases over 12 per cent added to the theoretic section. With pin connections, these members can be proportioned very closely to the section theory demands. In many cases fewer parts may be used, for a certain amount of material put in one member will do more work than if distributed over two or more.

The use of riveted joints and connections tends to diffusion of strains with many parts and connections, while with pin connections it is the reverse of this,—the strains being concentrated in fewer and heavier members, with wider panels, and fewer connectons, and better facilities of obtaining the effective use of the entire section of the material. With pieces which transfer the strains through the center of their diameter, the center of pressure can be made to pass through the center of gravity of the sections.

Pin connections require more careful and accurate workmanship. The pins must be turned accurately to the proper diameter, and the pin-holes in all members, both as to size and distance apart, must be mathematically correct. This requires special tools and appliances and careful workmanship, which, if not readily obtainable, will cost more than the saving in material over riveted work.

Pins must be estimated for shearing, bending and bearing pressures. The bearing pressure allowed is the same as for rivets, viz., 15,000 pounds per square inch. The bending pressure will require careful arrangement and design, so as to reduce the moment of forces to the lowest possible limit, it requires that the different members be so placed that no two adjacent members act in the same direction; the pin must not be too small, or there will result a heavy shearing action on the pin, or a crushing of the metal in the hole, causing elongation for want of sufficient bearing surface. Increasing the thickness of the head of a bar is not advisable, as this will increase the distance between bearings, with a consequent increase of the bending moments on the pin.

The practical results arrived at from many experiments show that with a proper arrangement of the joint, the greatest efficiency is obtained when the diameter of the pin is equal to four-fifths the width of the bar, and the thickness of the bar one-fourth its width. As the strain in the head of a link is less direct than in the body of a bar, and always a liability to imperfections in manufacture and welding, and it is essential that the bar should yield in the body rather than the head—to accomplish this, it is necessary to make the section of the metal in the eye opposite the center of the pin-hole, and perpendicular to the line of strain, not less than from 1⅓ to 1½ the section of the body of the bar.

Tables showing the shearing and bearing values of rivets for different thickness of plates and the bearing values and maximum bending moments to be allowed on pins for different maximum fiber strains, which are invaluable in saving time in the design of connections, will be found in the pocket books of Carnagie Bros. & Co., the Passaic Rolling Mill Co., and other manufacturers of rolled iron sections used in construction.

It may seem superfluous to urge upon you the necessity of making all the parts of a joint or connection as simple as possible, avoid all complicated or twisted pieces, particularly the bending or forging of shape iron, which is not only expensive but cannot be done without injury to the material. When the joint has to be riveted it is essential that it be designed so that the workman can get in his rivets while hot, and can deliver such effective blows of the hammer so as to upset or swell the whole length of the rivet that it may fill every interstice and inequality of the hole. A rivet which has been heated only at the point and made tight in forming the rivet head is of very little service; which is fully shown when a rivet has to be removed for any purpose; if it has been done in an imperfect or careless manner it can readily be driven out when the head is cut; but when it has been heated fully as much at the head as the point and driven by a skilfull workman so that the effect of the hammering is transmitted to the more distant and interior particles, it will, in many cases, be necessary to drill it out, so completely has it become part of the iron into which it is forced.

For pin connections, the conditions of manufacture and the quality of material and workmanship are always of the strictest kind.

The arrangements and proportion of the different parts in the connections sometimes require a great amount of skill, and it is hardly saying too much to state that the value of a structure can be measured by the fitness and symmetry of its connections.

## Architectural Grammar.*

BY PROFESSOR N. CLIFFORD RICKER, OF THE UNIVERSITY OF ILLINOIS.

IN the presence of a true masterpiece of one of the great architectural styles of the past, even the most careless observer is impressed by an emotion, whose source is far deeper than the superficial astonishment, caused by the splendor of the polished materials, by their variety and preciousness, by their massiveness, or by the profuseness with which they are employed. He feels that the structure before his eyes may almost be said to possess an organic life, so justly are its different elements proportioned to each other, and so nobly does the entire building fulfil its destined purpose. It seems to have been the work of inspiration, of tireless and ever-living beings, not of men like himself, whose best years are but few. Such a structure represents architecture rather than building, rather the poetry than the plain prose of our noble art.

If we examine another example belonging to the same style, and intended to satisfy some different need of man's intellectual or physical nature, we shall probably find it quite diverse from the former in its general effect, and even apparently entirely different. But a close examination reveals a similarity in detail and ornamentation, and shows that its apparent diversity is caused by a change in the arrangement of the plan, and also results from the adoption of a higher or lower key or scale of treatment and cost. In its way, it may be as perfect and satisfactory as the largest and noblest example of the style.

From a study and comparison of a series of selected examples, we eventually perceive that the style considered has a peculiar artistic flavor, so to speak, or rather a particular mode of decorating its structural parts and of conventionalizing its decorative forms. This may properly be termed the genius or spirit of this particular style, and is deathless; even though the purposes and applications of architecture may afterward be utterly changed, this spirit of the style may be revived and may furnish the inspiration required in the treatment of new problems by those architects whose souls may be so attuned as to feel its spiritings.

Taking a beautiful example of a different architectural style, we find that this style possesses a distinctive genius as well as the first, but of a quite different nature, rude and savage, refined and polished as it may be, but whose seal is as evidently impressed on all the works of this second style as in the first case.

By applying this mode of study to the principal architectural styles, we soon realize that each style has its special genius, all of these varying greatly, yet producing artistic and satisfactory results, even when seconded by poor materials and rude workmanship. Nowhere is it proved that the higher realm of architecture is exhausted, and that the genius of a new style may not now appear at any time, under suitable conditions, and by its esthetic beauty inscribe the name of America high among those of the great architectural nations of the deathless past.

Ordinary grammar may be, and frequently is, limited to a dry and terse statement of the most obvious facts of language, those facts which may be memorized by a disgusted and reluctant pupil, and forming the mere naked skeleton of the national tongue. Others extend it to comprise the arrangement of the words in sentences, and of sentences in complete paragraphs. But it seems to me that this, though essential, is but the least valuable portion of what grammar ought to teach us. It ought to lay before our eyes the hidden process by which the divine poem or the soul-enthralling tale is evolved by the soul of the writer, to teach us to taste and distinguish the diverse artistic flavors of the writings of different authors, belonging to all races and times; or, in short, that grammar should give us the bones, the flesh, and the soul of literature; better the last alone than the two former without this.

So in architecture, we may have construction pure and simple, which may be called the bones of the structure; we next have the various decorative forms and motives, which are applied to this construction, to render it more pleasing in our eyes, and which may be said to form its flesh; but the genius is that divine harmony of construction and decoration which unites both, and endows the structure with immortal life. Architectural grammar properly comprises all three, though too frequently applied to the arrangement and proportions of the details only, while construction is thought to be beneath the notice of art. But the massy, rough-hewn pier may be as beautiful and impressive in its way as the polished column with its delicately carved capital; the broken surface of the granite gleaming with the play of sunlight on the faces of its myriad crystals frequently surpasses the most careful work of the stonecutter, if the architect but appreciates and properly employs this beauty.

Only that architect whose soul does pulsate in harmony with the genius of the style can revive a past architectural style, or hope to evolve a new one, worthy to rank with those of history. The most careful attention to the forms of details, and to the arrangement and sequence of these details, never produces an effective and really successful building, unless we can perceive in all its parts a harmony and consistency which causes them to unite in an organic whole, and unless no single change can apparently be made without injury to the general effect.

We may, therefore, define Architectural Grammar in its broadest sense as being the art of obtaining beautiful and effective results in architecture in any or all of the following ways:

1. By the innate beauty of the material used, its crystalline luster, fine color, variegated coloring, etc.

2. By the particular mode of treating the external surface of the material adopted, as in stonecutting, etc.

3. By the contrast and harmony of color and texture of the various different materials employed together.

4. By the use of detail forms, beautiful in themselves, aside from their connection with the materials or their applications.

5. By the method employed for subdivision of the wall-masses, by means of projecting, recessing or emphasizing certain portions.

* Paper read before the third annual convention of Western Association of Architects, Chicago, November 17, 1886.

6. By the centralization and accentuation of some single feature or portion of the exterior, making this the keynote of the design.

7. By the suitable decoration of the interior by color and form.

8. By the use of sculpture in the form of fine bas-reliefs, panels and statues, as an adjunct to the architecture.

9. By the furniture and furnishing of the interior.

10. By the use of painting, historical and decorative, to ennoble the interior.

If we examine all the historical styles of architecture, we shall find them making use of most of the expedients here indicated, though this is carried out in different ways, because modified by conditions of climate, of national taste, and rarely affected by individual preferences. By collecting and classifying the modes in which these expedients are employed, we shall find that some are common to all styles, and will be equally applicable to all future styles; others are common only to a certain group of styles, as many of the proportions and relations of the details of the column and its entablature are equally applicable to the Grecian, Roman, Renaissance and modern orders. Others are peculiar to a single style, just as the peculiar system of surface decoration employed in Spain by the Moors is found nowhere else in precisely that form.

If this method were properly carried out by a competent investigator, it would furnish a definite basis of principles and rules, for judging of the real measure of success obtained in any structure, and would further establish the rules to which attention should be paid in designing any new work. It is actually the process of investigation now employed in the study of any science, and is the only one which promises to yield results of any value.

Architectural grammar has usually been incidentally treated as forming a small portion of a general system of esthetics, applied to all forms and manifestations of art and literature, and therefore has not been of much service to the architect, except for the cultivation of his taste in the most general way. Or, some author, gifted with marvelously keen insight into the production and composition of art works, has undertaken to lay down general principles for our guidance, deduced from a study of the works of all periods, or more commonly limiting himself to those of a single period. Semper was, probably, more successful in this way than any of his rivals, principally because he was a practical and successful architect as well. Yet the principles and suggestions in his great work on Tectonics, or Applied Esthetics are tinctured by personal preferences and taste, and also by Germanic ideas, so that the work cannot be wholly accepted as a guide for an American architect. We all know the great merits and the surprising eccentricities of Ruskin, who is probably the most successful English writer on architectural grammar; at any rate he is the one most generally known, and whose writings have exerted the greatest influence in awakening and originating the present great art movement in England and America.

Ruskin enters into the spirit of the men who designed and erected the masterpieces of the middle ages, more deeply than any other writer, yet is always biased in favor of Italian and French art, and seems never to have appreciated the refined purity and noble elegance of the classical styles of Greece, Rome, and of the Renaissance. The ideal writer on this subject should be equally acquainted with all styles, biased by none, and should be capable of appreciating all, calmly comparing their relative values. Perhaps it is too much to expect that such a man should be produced in our busy world, that he should find opportunity for the necessary study, and that his words should be heard and heeded. Still, it would seem that more might be accomplished in this way than has heretofore been the case, if a suitable method were employed.

One of the greatest difficulties in the way of the modern architect, especially when his artistic training is self-acquired, or merely imbibed from his surroundings in an office, is that there are so few available books on the subject. We do have various works on the proportions of the orders, the details of the various styles, etc., which merely form the husk of the kernel, but few authors go further, excepting Ruskin, and bare before our eyes the processes and methods employed by the designers of great and successful art-works.

Some schools devote themselves to the practical study of architectural grammar, as the Architectural School of the Ecole des Beaux Arts at Paris makes designing the chief feature of the course of study, subjecting all else to the production of a few highly skilled designers. The office method is practically employed there, for the pupils learn from each other, and from the criticisms of their instructors, and by practice, rather than from any direct instruction in the principles governing the art. But they do eventually acquire a strong and appreciative sense of design and propertion, so that their works are rarely marred by bad taste in arrangement and form, though frequently conjoined with bad construction, as may be seen in almost any monograph of recent French architecture. The work of this school is also limited to a single style, the Renaissance, which simplifies the system of training, just as the School of Architecture at Berlin used to permit nothing which was not Greek or German-Greek.

This system of instruction is only available where large numbers of students are in attendance, some of whom possess a special genius in design, thereby serving to greatly elevate the tone of the art-atmosphere of the school, and to improve the character of the results of the system.

Although this culture is there acquired within the limits of a single style, the successful student easily obtains a similar insight into the proportions and artistic treatment of any other style, provided he can free himself from all mannerisms and special forms and proportions, peculiar to the style previously studied. Just as a student, who is thoroughly versed in the history, spirit and tendencies of English literature, can more readily acquire a good similar knowledge of German or French literature, than if he previously possessed a mere smattering of general literature.

The late Mr. Richardson was trained in this way, devoting most of his attention to the Renaissance style, and probably only incidentally studying the Romanesque in his vacation tours. But he found very little use for the Renaissance in this country under present conditions, and his wonderful and well-earned success is largely due to his keen perception of the possibilities inherent in the fresh and unexhausted Romanesque, its suitability for the purposes of most of his buildings, and to his power to free himself from the mannerisms of Renaissance. His thorough knowledge of the architectural grammar of a single style was simply diverted into a new channel.

Very few architects can have such advantages of early training, but must pursue this study by means of observation of the effects produced by executed buildings, by reading such general works as are available, and above all, by the careful study and comparison of collections of photographs. These, with the constant endeavor to do one's best in every successive work, will soon elevate the character of American architecture to a point, when the development of a new and national style of architecture may confidently be expected.

Our country possesses all the material requisites, which appear to have aided the development and elaboration of the great historical styles. We have an abundance of all kinds of constructive materials, many suggesting and requiring new methods of artistic treatment, unknown to the past; a system of popular government permitting the most complete freedom of the individual, compatible with the general welfare of the community; a mixed race, descended from the most enterprising individuals of the various European races; wealth sufficient to provide for the cost of structures of almost any desired magnitude; an appreciation of good art, which is still youthful, but which is growing with a rapidity unknown in the past history of the world, and whose results in some of our great cities are even now scarcely inferior to those to be found in any time or any style; and we also find a strong and united feeling among the members of our profession, impelling them to unite and to labor for the common good.

With all these favorable conditions, it certainly does not seem too sanguine to expect to live to behold the development of a great and noble architectural style in America, rivaling those of the past. Whether this result is ever attained largely depends on the thorough and successful study of architectural grammar by each individual member of our noble profession.

## The Relation of State Medicine to the Profession of Architecture.*

BY OSCAR C. DE WOLF, M. D., COMMISSIONER OF HEALTH, CHICAGO.

IN thinking over the various definitions of state medicine, a line from an almost forgotten dramatist suggests itself to my mind: Parkes, whose Practical Hygiene is a classic; De Chaumont, his posthumous editor and worthy successor; Dunglison, of the Medical Dictionary; Mapother, Day, Southwood Smith, Chadwick, John Simon, Sir Lyon Playfair, Bowditch, Billings, Rauch, and others, have all tried their hands at describing and explaining a subject which still remains

Like wit, much talked of, not to be defined.†

In some respects the latest definition—that of the secretary of our State Board of Health—is the best, as it is certainly the most comprehensive.‡ Dr. Rauch succintly defines state medicine as the connection of the state, with both curative and preventive medicine for the promotion, regulation, and control of measures affecting the public health. But for the object of these remarks I shall confine the term to its old signification, as illustrated by Dr. Parkes, namely: the legal regulation of the conduct of individuals toward each other in strictly sanitary matters. "For example," he says, "pure air is a necessity for health; but an individual may have little control over the air which surrounds him, and which he must draw into his lungs. He may be powerless to prevent other persons from contaminating his air, and thereby striking at the very foundation of his health and happiness."

What, then, shall it avail a man, though he have the wealth of Crœsus and employ the lineal descendant of Vitruvius Pollio himself to design his stately mansion, if the conditions beyond his own control necessary to insure a prompt removal of his household wastes, the protection of his water supply from pollution, and the freedom of the air he breathes from contamination, be disregarded by that organization formed "to promote the general welfare," and which we call the state? Though there be observed in the building itself all the canons of all the authorities on ventilation and heating—from Dr. Arnott, who set himself the simple problem of securing "at will, the temperature most congenial to the human constitution, and air as pure as blows upon the hilltop," down to the latest patentee of the newest "automatic zephyr ventilator and breath of spring pulsifier;" though the highest skill of the sanitary engineer, and the most consummate art of the sanitary plumber be lavished upon its appointments, a man's house may, nevertheless, be anything but his castle against the foes to his health, if these be fostered and recruited by municipal neglect and state indifference.

Without the aid of state medicine, the architect will build the house in vain. He may successfully cope with the vicissitudes of a climate such as we have here in Chicago, where the mercury ranges from 22 below to 95 above, a variation of 117 degrees; where for months together less than an inch of rain may fall in thirty days, and then anon a tropical downpour of five or six inches in twenty-four hours. He may even forecast the meteorological future and plan for a twenty-five per cent increase in the annual rainfall, such as is shown by the record to have taken place in this city within the past fifteen years. He may provide for possible seismic phenomena; construct fireproof walls and incombustible interiors; arrange for light in quantity and direction sufficient to satisfy a German oculist, air space and ventilation adequate to the demands of Angus Smith, plumbing scant and simple enough to meet the approval of that anonymous architect who recently announced in the New York *Evening Post* that the best plumbed house is that which contains the least plumbing. He may do all this only to find his best efforts set at naught by conditions which legalized authority alone can satisfactorily adjust or remedy.

* Paper read before the third annual convention of the Western Association of Architects, at Chicago, November 17, 1886.

† Thomas Otway, author of "Venice Preserved," etc.

‡ Address in state medicine, before the American Medical Association, St. Louis, May 6, 1886.

It is this authority, directed to removing causes which injure the health of the people, that constitutes state medicine, and it consists in that body of legislation, whether municipal ordinance, act of general assembly or federal statute, which is intended to promote the sanitary welfare of the community. It embraces not only provisions for the prevention, exclusion or limitation of disease, by quarantine, isolation, disinfection, etc.; for enforcing vaccination, prohibiting food adulteration, punishing the creation and maintenance of nuisances, protecting water supplies, etc., but also a rapidly increasing volume of legislation concerning the construction of buildings with reference to their security from fire, to their lighting, ventilation, drainage and occupancy.

"After medicine," says Mapother,* "the professions most concerned in the preservation of the public health rank those of the architect and engineer." And the genial and scholarly Irish professor of hygiene did not hesitate to acknowledge his indebtedness to "those most useful professions," when speaking of ventilation, water supply, baths, public parks, hospitals, lodging houses and the dwellings of the poor. It is the fashion just now to decry at least one of these professions, and we are told in a chapter on the construction of habitations in a recent text-book of hygiene, that "Architects and builders have not kept pace with the sanitarian in the study of the conditions necessary to be observed in building a dwelling which shall answer the requirements of sanitary science."

Still more recently a well-known sanitary engineer quotes the president of the Glasgow Institute of Architects as saying: "To most architects, and especially to young architects, the construction of a building is probably, and the sanitary arrangements, shall I say certainly, the least attractive branch of their professional work; and yet it is the branch of their work which most directly affects the health and comfort of our clients." The author of "The Sanitary Drainage of Houses and Towns" ventures to think that the president of the American Institute of Architects would not differ very much from his Scotch colleague in his opinion that architects attach too little importance to their responsibilities in connection with the drainage of houses which they plan, and for every detail of which they ought to have a feeling of personal accountability. And he adds for himself, based on his own experience in connection with plumbing work in houses designed and built by many of the very first architects of the country, "that the architects who know, who think or who care very much about the practical details of house drainage are very rare; and that they are more rare among the leaders of the profession than among those who, having less artistic merit, are driven to achieve reputation in practical matters." There are architects and architects, and this sanitary engineer has evidently had to do mainly with other than members of the Western Association, among whom I happen to know many who combine both artistic merit and that sincerity which Emerson commended in him who "builded better than he knew."

It may be true that some architects are open to the strictures of these writers; but I apprehend that the true explanation of any seeming disregard of what sanitarians consider the essentials of domestic architecture lies with the *clients* of the architect in their want of definite knowledge of these essentials and of their paramount importance, rather than with the architect himself. In his work on the "Principles of Ventilation and Heating and their Practical Application," Dr. Billings touches one root of the trouble when he says: "Every one who has occasion to examine the subject discovers that it is difficult to secure good ventilation throughout a building, but very few know what the principal difficulty is. Many persons seem to suppose that it depends upon some properties of gases as yet unknown, or upon some mysteries connected with the fact that heat is a mode of motion of the molecules of matter which can only be expressed in complicated mathematical formulæ. The essential difficulty, however, which architects and engineers will find most prominent is that of cost. If the question of expense be entirely set aside, ventilation becomes a comparatively simple matter." So too, I presume, the architect who has as tractable a client as Mr. Howells portrays in the "Rise and Fall of Silas Lapham," and who receives *carte blanche* as to sanitary details in general, finds no insuperable difficulty in satisfying the "requirements of sanitary science."

But even when this is withheld, it is clearly incumbent upon the architect, from his earliest interview with his client—whose sanitary ignorance may, as a rule, be safely assumed—to keep him advised of the importance of these requirements. It is the architect's duty, as Billings says, to see that "after the various additions to the plan which will be made at the suggestion of the owner's wife and several of his friends on whose taste he relies, have increased the cost above what he had intended, he does not, in the spasm of economy and retrenchment which will attack him, make the reduction in the ventilation" or drainage, or other sanitary necessity, rather than on some of the ornamental work outside. What your duty is, however, I do not need to tell you; still less do I assume to instruct you in those engineering and technical details which are of the essence of your professional attainments. When the public comes to know the value of the conditions of health in the home and is willing to pay the cost of them, the architect will not be found wanting.

> "But how can he expect that others should
> Build for him * * *
> * Who for himself will take no heed at all."

A more profitable and appropriate line of comment by a commissioner of public health, accorded the privilege of addressing the members of a profession so intimately concerned with "the life o' the building," is afforded by a consideration of some of the architectural causes of disease and the role which state medicine may play in securing their remedy.

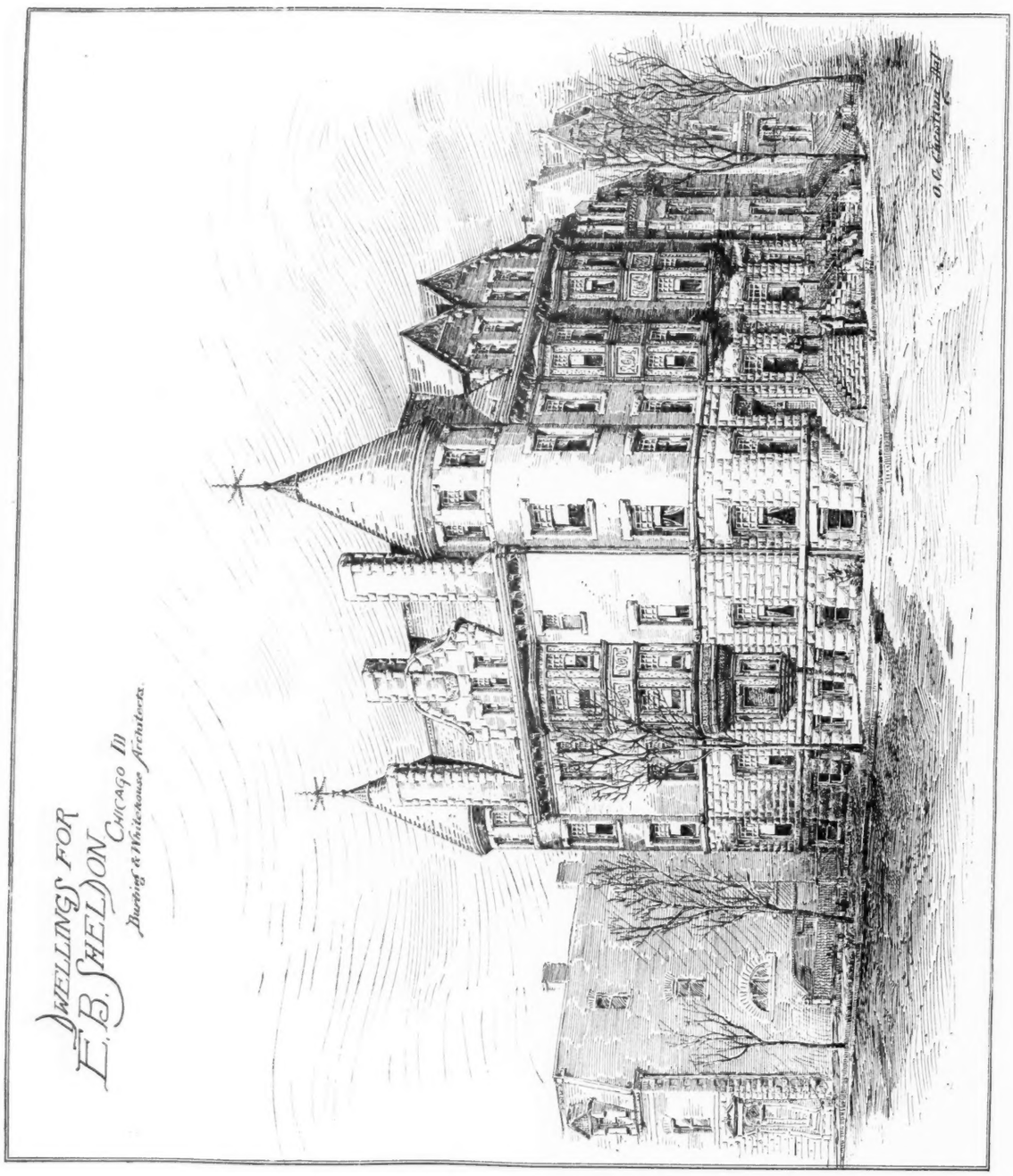
During the last census year the causes of a total of over 750,000 deaths were reported in detail. Of this number the group of general diseases to which diphtheria, typhoid or enteric fever, cholera infantum, etc., belong, furnished more than 200,000, and the group to which consumption belongs furnished 136,000 more. Fully one-half of the total mortality of the country is properly credited to the preventable diseases. Not all of these, it is true, are wholly preventable by any attainable perfection in the construction of habitations. Given the introduction of the particulate germs of scarlet fever, for example, into a family housed in accordance with the most approved hygienic requirements, and the disease will be as certainly developed as these germs find access into a susceptible organism. Pure air, unpolluted water, spotless cleanliness, in themselves afford no protection against these specific communicable diseases. There is this, however, to be said concerning the whole class of eruptive fevers—smallpox, measles, scarlet fever, etc.—as well as diphtheria, whooping cough, and other diseases whose propagation and dissemination depend upon a particulate contagion, to wit: That the subsequent safety of the dwelling into which such a disease has once obtained access is very largely a question of its architectural construction. The solid particles of these contagia—dried up into a mere dust, absorbed by porous bodies, attached to adhesive surfaces—retain their poisonous properties for varying periods, some of them for a practically unlimited time. Before the discovery of Jenner had thrown its ægis of protection over the world, almost every dwelling was a perennial center of small-pox infection; and it is not yet definitely known how long this poison, or that of scarlet fever, diphtheria, erysipelas, hospital gangrene, etc., may remain potent in the plaster of a wall or ceiling, or in the woodwork of a room. Thanks, however, to modern sanitary science, this class of diseases is steadily losing its deadly preponderance, and out of the total of deaths each year, it now furnishes less than 10 per cent. With better housing, purer water, fresher air, and more wholesome food, comes a greater resisting power to all forms of disease; and sanitary architecture goes hand in hand with the other branches of sanitary science in restricting the sway of preventable diseases.

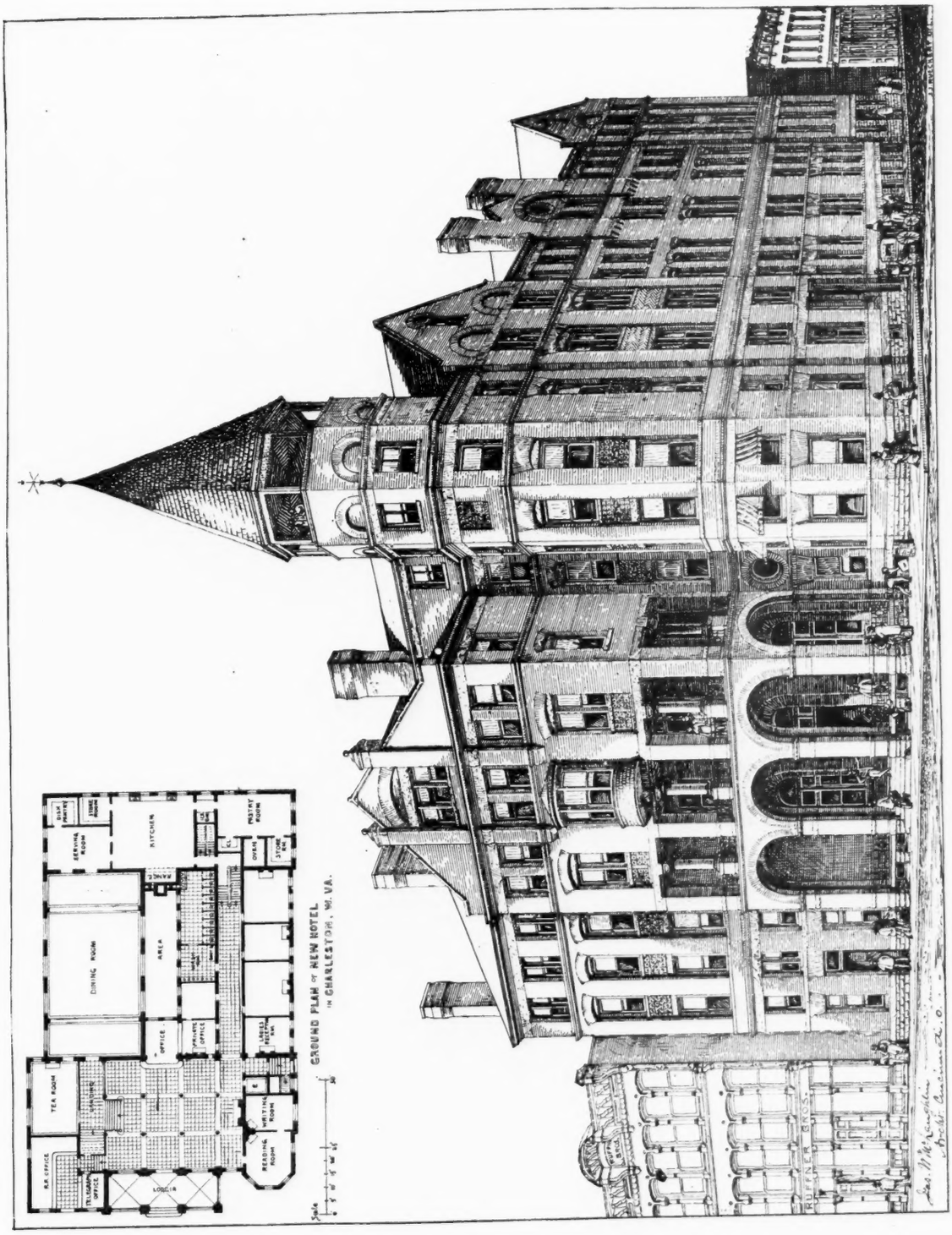
And yet that there still remains much to be done is shown, among other facts, by the statistics of mortality from consumption and pulmonary diseases. More than one hundred thousand persons will have died in this country during the present year from pulmonary consumption alone; more than one-eighth of the total mortality from all causes combined. With the stock illustrations concerning the evils of impure air, the Black Hole of Calcutta, the Grotto del Cane, the bird and the bell glass, etc., we are all tolerably familiar; but at the risk of taxing your patience, I will briefly refer to what has long seemed to me the most striking and conclusive experiment of this kind ever made. A body of men, rigidly selected by strict physical examination, at the best period of life, engaged in open-air duty of a moderate character, comfortably clothed, well fed, housed at considerable expense, and promptly cared for, even in slight illnesses, by the highest medical skill—in short, the British soldiers in barracks, at home, in time of peace—were found to be dying off at the rate of 17.5 per thousand per annum, at the same time that the mortality of both town and country populations combined was only 9.2 per thousand at the same ages, and of the country population at those ages alone was only 7.7 per thousand.

When the cause of this great disparity came to be investigated it was discovered that the diseases known as pulmonary were the fatal maladies which specially affected the soldier and laid him low. It was discovered that while in civil life the deaths by pulmonary or chest diseases at the soldiers' ages were 6.3 per thousand, they amounted in the cavalry to 7.3, in the infantry of the line to 10.2, in the Guards to 13.8. Of the entire number of deaths from all causes in the army, diseases of the lungs constituted the following proportion: in the cavalry, 53.9 per cent; in the infantry of the line, 57.277; in the Guards, 67.683 per cent. Pushing their inquiries one step farther still, the reporters came at last to the kernel of their task. Why should these selected soldiers suffer so especially from diseases of the chest? Was there anything in their occupation, in their clothing, in their diet, that would account for the phenomenon and indicate the predisposing causes of their excessive mortality from pulmonary disease? On these points the reporters were able, by the process of exclusion, to remove many suspected causes. They were able to exclude night duty, want of exercise, unsuitable employment and intemperate and debauched habits. These influences the inquirers did not, of course, ignore, but by comparison they found them insufficient to account for the disparity which was seen to exist between the soldiers and the other classes of the community.

I quote the rest of the story from the graphic pen of Benjamin Ward Richardson, whose "Field of Preventive Medicine" is at once the most charming and the most instructive volume in sanitary literature: "At last they came upon one cause which they could not exclude, and which, in accordance with the Newtonian saying, was both true and sufficient cause to account for the phenomenon. That one cause, or rather that one series of causes, was overcrowding, insufficient ventilation, and nuisances arising from latrines and defective sewerage in barracks. A single agent, *vitiated air*, acted with such intensity, especially when superadded to a certain degree of exposure, as not only to produce in the foot guards an amount of chest disease and especially of pulmonary consumption greater than was produced in civil life by all the other causes united, but actually to carry off annually a number of men, nearly equaling in the infantry and actually exceeding in the guards, the number of civilians of the same age who died from all classes of disease." Dr. Richardson justly characterizes the record of these observations as the best and most forcible, because most extended and accurate, that has ever been supplied respecting the influence of confined air in the living and sleeping apartments of men who are accustomed even to an active life and to the enjoyment of much out-door exercise. If it had been desired to carry out a great physiological experiment in order to determine how diseases of the lungs might be artificially induced in men who had been healthy up to the time of the experiment, no method could have been devised that would have led to a series of results more striking or more convincing. Neither could the experiment have been more satisfactorily concluded than was done by following the recommendations of the commissioners. They recommended that an entirely new system should be introduced into barrack-life; that air, fresh and pure, should at all times circulate through the buildings, and especially through the dormitories; and that every soldier should have efficient and sufficient breathing space. Since these regulations have been in force the subjects of this experiment no longer occupy the unenviable position of

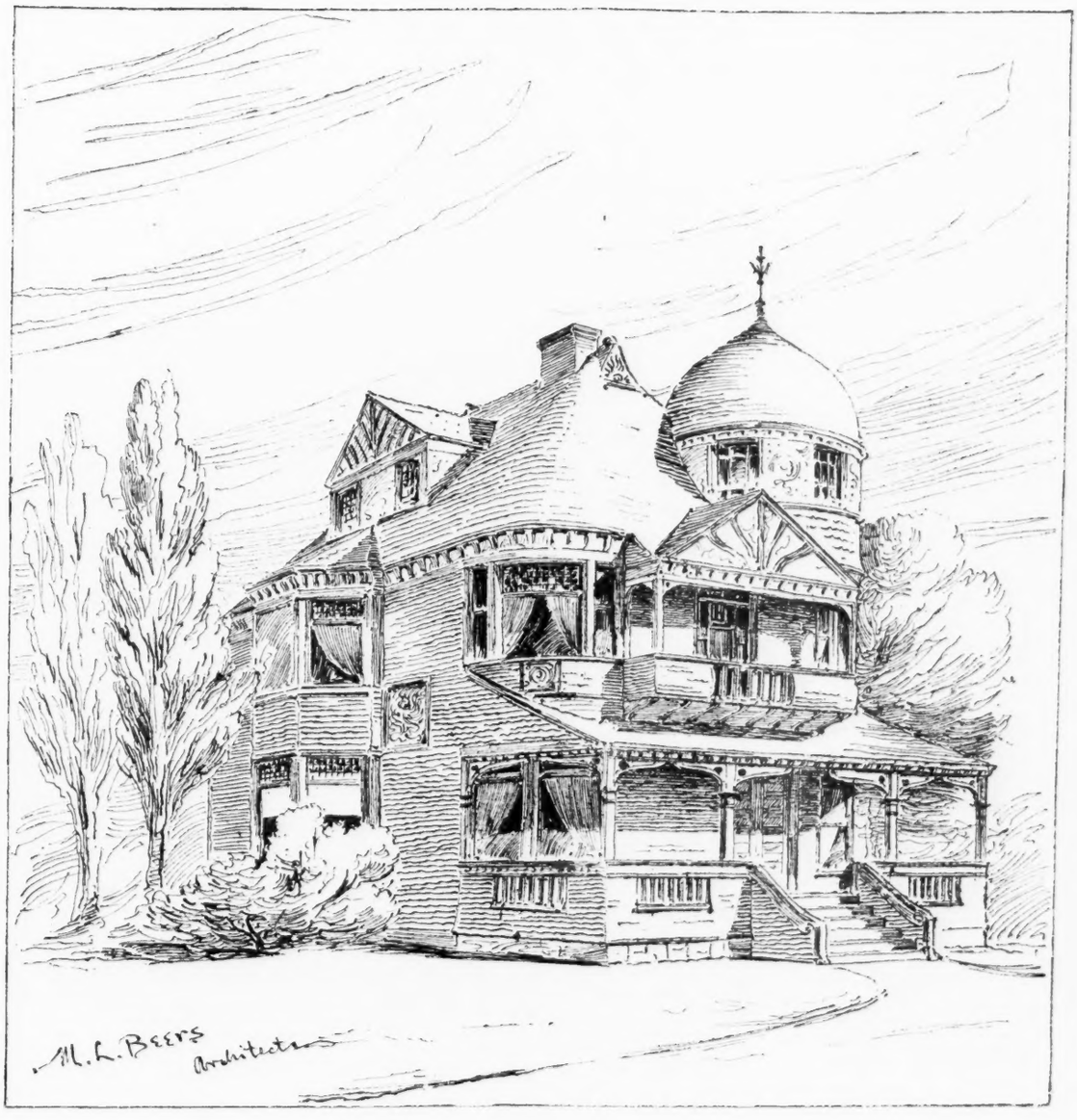
* Lectures on Public Health, delivered at the Royal College of Surgeons in Ireland, 1864-67.


DWELLINGS FOR
E. B. SHELDON
CHICAGO ILL
Burling & Whitehouse Architects.
O. C. Chesbrough Del.


GROUND PLAN OF NEW HOTEL
IN CHARLESTON, W. VA.
KITCHEN
DINING ROOM
AREA
OFFICE
TEA ROOM
KITCHEN
WRITING ROOM
READING ROOM
LOBBY
RUFFNER BROS.

STORE BUILDING FOR FOREMAN & KOHN, CHICAGO.

BAUER & HILL, Architects.

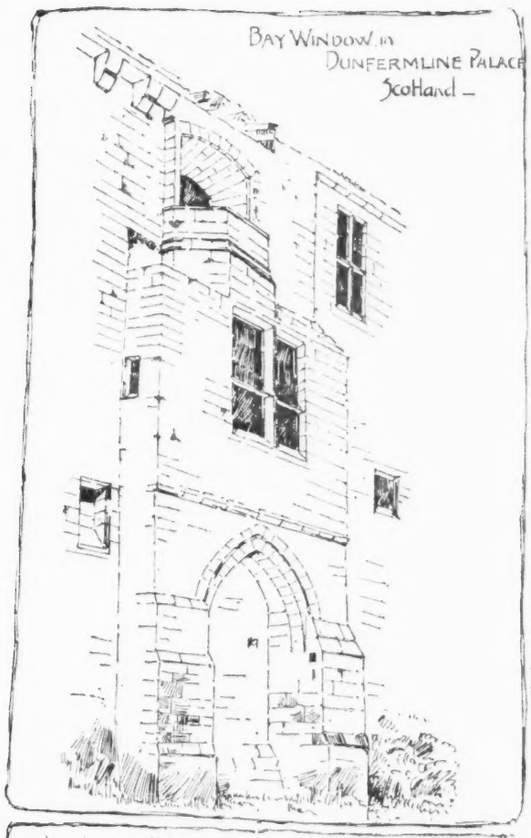



RESIDENCE OF E. B. MIX, AURORA, ILL.

M. L. BEERS, Architect, Chicago.

South Park Ave. M. E. Church

L. S. Dyer, Archt



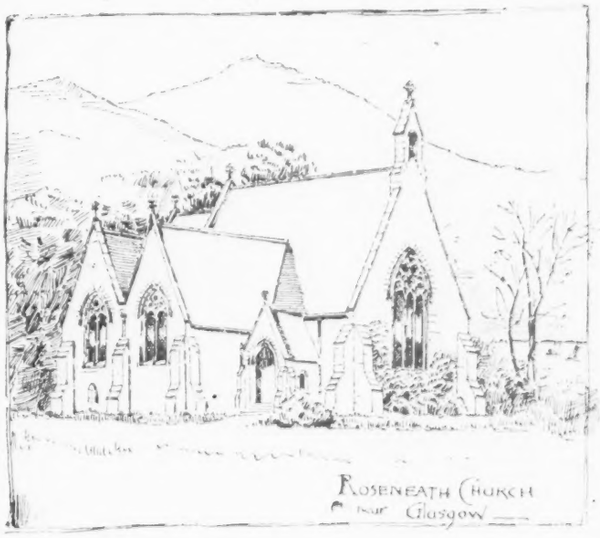
BAY WINDOW IN DUNFERMLINE PALACE SCOTLAND.

ABBOTS HOUSE, DUNFERMLINE.

# SKETCH BOOK SERIES.

## No 1. by Harry Lawrie.

ENTRANCE GATE HATTON HOUSE NEAR EDINBURGH



ROSENEATH CHURCH near Glasgow.

being first in the ranks of those who fall victims to pulmonary consumption and other affections of the respiratory organs, but are rather the models of a lower mortality; so that as the jails, once the foci of fever, are at this time the most free of that disease, the barracks once the foci of consumption, are now the most free of that destroying malady. In the jail in its very worst condition of foul air, the disease *typhus* was the scourge; in the barracks with foul air, but less foul, *consumption* was the scourge. Pure air substituted in both places, both diseases have been enchanted away. Well may Richardson say that lessons such as these should never be cast aside while yet in many of our best houses—best in relation to their appearance and cost, not in respect to their construction—the errors that were common in the barrack are still present, and rooms are used as sleeping rooms which stand in the eyes of the sanitarian like so many experimental boxes for the synthetical development of pulmonary disease. "The room is too small; the room is devoid of a fireplace; the room is devoid of a ventilator; the room has a window that will open with difficulty and at best but a little way; and yet that room is used as a sleeping room for one, or it may be two persons. These are the rooms in which they who are disposed to pulmonary affection find their early fates; these rooms are the vestibules to the grave."

To this picture, as a fitting contrast, may be added the following seven points suggested as the "charter of health" which a house should have, in its construction and its architecture, to fit it for human habitation:

It must present no facilities for holding dust or the poisonous particles of disease; if it retain one it is likely to retain the other.

It must possess every facility for the removal of its impurities as fast as they are produced.

It must be free from damp.

It must be well filled with daylight from all points that can be charged with light from the sun without glare.

It must be supplied with perfectly pure air in steadily changing current.

It must be maintained at an even temperature.

It must have an abundant supply of pure water.

Such houses are by no means impossible ideals. They have already been realized in many of our suburban towns, and by the agency of state medicine, they may be made possible even in cities. As many of you are aware, the forthcoming session of the general assembly of this state will be urged to pass a law framed under the auspices of the Illinois State Association of Architects to provide for the regulation and inspection of the sanitary construction and alterations or modifications of buildings in cities and villages, and to secure proper ventilation and sewerage systems for habitable buildings, etc.

This act is intended to supplement existing legislation upon the subject, and under which, in this city alone, a great saving of life is annually effected.

Section 686 of the city ordinances declares that "it shall be the duty of the commissioner of health to enforce *all* the laws of the state and ordinances of the city in relation to the sanitary regulations of the city, and cause all nuisances to be abated with all reasonable promptness," etc.

This ordinance is very general in its character, but there are many others which apply directly to specified unsanitary conditions in all classes of buildings, and under this legislation the sanitary work of the city is divided into:

*First:* The sanitary work performed in occupied places of habitation and which includes all buildings wherein any person may dwell or lodge.

*Second:* The control of the sanitary conditions and safety as relates to egress, protecting machinery and storage of dangerous materials in places of employment or service.

*Third:* The exclusive control under the state laws of all the sanitary arrangements or conditions, such as the heating, lighting, ventilating, plumbing and drainage to be provided in every building within the city, during its construction and which is to be used as a place of habitation.

Section 1347, of the city ordinances declares "that no person shall hereafter erect, or cause to be erected, or converted to a new purpose by alteration, any building or structure which, or any part of which, shall be inadequate or defective in respect to ventilation, light, sewerage or any of the usual, proper or necessary provisions or precautions for the preservation of health."

The state laws invest the commissioner of health with authority to control all the sanitary arrangements to be provided in any habitable building within the city.

The enforcement of these laws by the inspectors has been the means of accomplishing more valuable sanitary work than by all other ordinances combined, in that by their enforcement all improvements made are of a *permanent character* and place the building (except in cases of accident) in a permanently good sanitary condition, thereby benefiting all occupants uniformly throughout the city.

The construction of dark, damp, unventilated living rooms has been wholly prohibited for the past two years. All water-closet rooms are provided with sufficient external light and ventilation, and are never permitted to be in any way directly connected with any habitable room. In fact, all sanitary conditions in the construction of buildings in this city are now enforced, which are in anywise conducive to the health of the occupants.

What state medicine may do to regulate the conduct of individuals toward each other in strictly sanitary matters, and so to promote the end of hygiene, which aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote, is well illustrated in our neighboring town of Pullman, where a corporation stands in the relation of the state to the community in this regard. I have already treated of this town from a state medicine standpoint, and will only now cite its death-rate as the sufficient criterion of the success which may attend the plenary control of the sanitary conditions of human life.

The town has now been in existence six years, and its population is about nine thousand—a period sufficiently long and numbers great enough to eliminate any exceptional conditions which might obtain. The death rate of the town of Hyde Park—of which Pullman is legally and territorially a part, in which the same natural conditions exist, and which is occupied by substantially the same kind of population as that of Pullman, averages 15 per thousand annually, according to the last report of the State Board of Health. In Pullman, the deaths have ranged from 6.9 to 7.6 in every thousand of population—or less than one-half the deaths in the territory immediately surrounding the town.

The average for American cities is over three times this number, and the average annual death-rate of the world is 32 out of every thousand of population. The average annual death-rate in the city of Mexico is 56 per thousand, or eight times the rate in Pullman. The healthful conditions here are unequaled by those in any city of the world. The lowness of the death-rate is remarkable. With one quarter of the physicians that ordinarily administer to a population of this size, Pullman has only a little more than one quarter of the deaths usual in the same number of people.

Gentlemen of the Western Association of Architects: Your profession is one of the highest exponents of the material attributes which differentiate man from the beasts which perish. Man alone makes for himself an artificial climate, outwits the elements, and makes all nature tributary in his habitation to the conveniency, strength and beauty which your ancient authority, Vitruvius, says are the three requisites in every structure, and without which no building can merit our esteem and approbation.

If, as Sallust says, "every man is the architect of his own fortunes," you, gentlemen, are more than the architects of your own. To your professional intelligence, sincerity and skill every man must trust for that without which fortune is but a dead sea fruit—a healthy life.

## Foundations.*

BY W. W. BOYINGTON, ARCHITECT, CHICAGO.

AT the request of your worthy president, I have prepared a paper upon my practice and experience in building foundations.

In the first place, no person can be considered a competent architect without having a thorough knowledge of the principles and essential requisites of a permanent foundation, particularly for heavy structures. The very best design for a building, if erected on an imperfect foundation, may be, in a measure, destroyed or rendered unsightly, and, not infrequently, unsafe. So that one of the essentials to success of an architect is, first of all, to thoroughly post himself on the subject of the various kinds of soils and substrata that he will have to encounter if his practice becomes extensive, as too much study and care cannot be taken when important structures are to be erected. No one uniform system of preparing foundations for any and all kinds of substrata will answer. I have found it necessary to vary in different places in this city, also in different parts of the country, where I have been called upon to use my judgment in determining what kind of material should be used. You may consult some persons who will say piling is the only safe foundation for soft, compressible soil, such as we find in Chicago and many other places. Others will say concrete is the only proper thing to put in to secure a permanent foundation. Others will recommend timber. I have found it desirable to use all of these kinds, adapting them to peculiar situations as circumstances seemed to demand, and sometimes combine all three in one substructure.

In later years the use of cast and wrought iron, and steel rails have been used for the purpose of covering large areas without being obliged to go down so deep to secure proper offsets in masonry; or to avoid having the masonry occupy so much of the basement above the floor surface.

It is also argued that the cost of supplying steel rails is no more expensive than a larger amount of stone masonry, or as much so.

While on this point I would like to refer to a paper prepared by C. W. Trowbridge, and read before the Chicago Architectural Sketch Club, August 30, 1886, which was published in THE INLAND ARCHITECT AND BUILDER, September, Vol. VIII, No. 3. If Mr. Trowbridge's investigations and theories are true, it becomes a very serious question as to the safety of using steel rails in connection with concrete for broad foundations.

The points he has brought to notice seem reasonable and philosophical, as he dwells mostly on past results and observations made, showing the effect of cements on steel. From his standpoint I should incline to favor cast iron, as the difference in cast iron is but a trifle more in cost, and its known qualities for durability altogether in its favor.

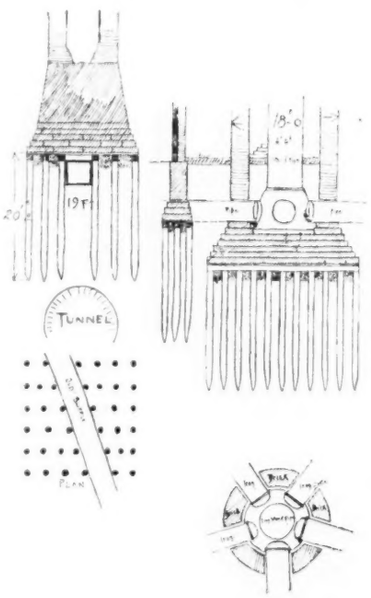
I have met with success with each, separate and all combined. My early experience and practice as an architect was very different and more diverse than any young man nowadays will be likely to experience. I was brought up among engineers, architects and master builders. Architects in my younger days were not so numerous as they are now. A master builder in my younger days was something more than a contractor of the present day. The former used to vie with each other to see which would do the best work; the latter vie with each other to see which can slight his work the most, with some honorable exceptions. One of my earliest attempts to put in a foundation for a heavy brick warehouse, which was to be erected on a black muck or peat soil, which varied in depth of from five to ten feet below drainage, at the bottom of which was blue clay, quite similar to the Chicago clay. It was very expensive building stone walls to the depth required. I adopted what was then called a system of puddling. First dig the trench of the required width for the footing stone; then fill in the trench with coarse, sandy gravel, settling the gravel with water. The gravel was not allowed to show itself above the water. Always keep water enough to envelop the sand and gravel. In this way all interstices would be filled solid. When this was filled to the height required for the foundation, then the footing stone would be commenced, and no better foundation upon which to erect a building could be made on such soil. Those buildings stand well today. Another experience I had in building was where heavy banks would press against the wall on one side and a flow of water constantly running on the other side. That I did repeatedly in constructing some of the large cotton mills in Massachusetts. One of the last designs I made before leaving for Chicago was for the

*Paper read before the third annual convention of the Western Association of Architects, Chicago, November 17, 1886.

largest cotton mill ever erected before or since, so far as I am informed, which was for Holyoke, Mass., and was situated as before described as to its foundations. The design was for seven stories and 400 by 80 feet. This schooling in my early days was in connection with eminent engineers, which gave me an assurance of success in my future course of practice. Some of you have undoubtedly observed the system of timbering and floor construction that has been adopted in the Marshall Field warehouse, on the corner of Fifth avenue and Adams streets. It is almost identically the same as was used in constructing cotton mills forty years ago, and it is a good form of construction where frequent columns are not objectionable.

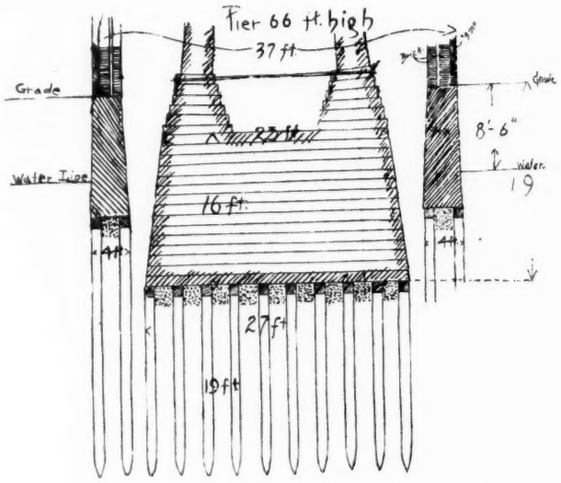
When I arrived in Chicago to reside the city had just commenced to construct their new system of water works, by pumps and reservoirs. A few years passed, when it was found necessary to establish a new system of water works for the city, by constructing a tunnel under the lake. The first system proved inadequate and a partial failure. I was selected as the architect for the reconstruction of the buildings, all of which had to be done around and over the buildings and engines that were first erected so as to not interfere with the pumping works or the old inlet of water supply from the shore basin. One of the first things to encounter and rather the most difficult to construct was the large stone smokestack, 80 feet high and a 5-foot flue, which to accommodate two boiler houses it was necessary to place the chimney directly over the old water conduit inlet. I undertook that task against the judgment of the engineer, he fearing the disturbance of the inlet, which must be done so as not to interfere with the water flow. In excavating for the foundation, it was found the old wooden conduit ran diagonally across the foundation, as I have represented on the diagram I now exhibit, by which you will see I drove piles on each side of the conduit, about 20 feet long. I capped these piles with oak timbers so as to have the bottom of the timbers clear the conduit. I filled the spaces between the timbers each side of the conduit with concrete, then planked over the timbers and commenced a stone foundation on the planks, as shown by this sectional drawing, all of which stood well for nearly two years without settlement. When the new tunnel was connected with the pump wells in the building the engineer took his own course without my knowledge of what was being done below my foundation of the chimney, or anyone else giving any thought to it. I was sent for one day by Mr. Cregier, the engineer, to come over to the water works, as there was trouble with the chimney. I went over, and found to my surprise that the chimney had gone down about five inches all at once. Still it stood plumb on all sides. I inquired of Mr. Cregier what was being done below. He said nothing that he was aware of that should interfere with the chimney. He said Mr. Chessborough, the tunnel engineer, was then putting in the new tunnel. I asked him if he could give me the location and the depth down. He said he could by the plans in his office, which, by a little figuring, he told me the tunnel was directly under the chimney, and so many feet below the surface. I took that data and applied it to my plan, and found, as I have represented on this diagram, that the top of the inlet tunnel was about two feet below the bottom of my piles under the chimney. In excavating for the tunnel the men felt the earth give in all around them when the brick arch was part way under the chimney. They hurried on with the arch without knowing the cause. There has never been any disturbance since.

On the opposite or west side, in front of the engine house where the present water tower stands, I encountered a quicksand bottom about 20 feet below the surface. It was very essential that a permanent foundation should be secured, as the iron standpipe, 175 feet high, had to rest on its center and receive the large mains from the pumps and the distributing mains. Should there be a settlement at this junction to any extent, the inlet and outlet pipes would break and destroy them. To guard against this liability on a quicksand bottom, I drove long piles and very close together, which drove very hard for the last few feet. I capped the piles with heavy timbers, filling all the interstices with concrete; then covered them with 3-inch oak plank, with a heavy stone foundation on top, as shown by the diagram. The inclosing wall surrounding the standpipe and iron stairway rested on the same foundation. These walls were pierced with five large holes for the receiving and discharging water mains, so that it actually stood on piers 175 feet high and about 16 feet at base, as shown by the diagram now presented. This diagram also shows the foundation of the inclosing building, which, as you will see by the diagram, stands on an independent pile foundation, cut off much higher than for the standpipe. Between the inclosing walls and the walls surrounding the standpipe there was a stone roof; and had the roofs of the main engine house and the boiler rooms been fireproof our water supply in the great fire would not have given out as it did.




Another similar experience I had in putting in foundations for the tower of the Chicago University, and for the Dearborn Astronomical Observatory in this city.

In building the University stone tower, which is about 150 feet high, I commenced it directly on the surface of the earth. I found it was sandy gravel for several feet in depth, and the situation would require grading up to a sufficient height to prevent frosts from getting below the bottom of foundation.




About 100 feet farther west and on a lower piece of ground, I had to erect the Astronomical Observatory. Here I found no gravel, and but a few feet to water. It was considered very essential to have the stone tripod, upon which the telescope was to stand, very firmly set, so as to avoid all earth vibrations, which would disturb and destroy accurate observations. In order to secure this, borings were made, and nothing but blue quicksands were found. By putting the foundations down deep and isolate them from the surrounding earth, it was considered it would insure a freedom from the earth's vibrations immediately around the Observatory. To accomplish this we excavated to the depth of 25 feet in quicksand and drove long piles below that. After capping the piles with timbers, and concrete between and heavy oak plank on top of timbers, the stone foundation was commenced and built up, as shown by the sectional drawing now exhibited; by which you will see the inclosing building was built on piles higher up. In constructing the tripod and the surrounding building, the different floors had to be completely isolated from the tripod. Nothing was allowed to touch it from the bottom to the top, for fear that any movement on any of the floors might jar the tripod. In this manner of construction a perfect success was secured, without the least settlement. And the tower, 100 feet distant, which, as before mentioned, having been built directly upon the surface, stands equally as well, without settlement. I have no doubt but that the same quicksands underlay this tower, as we found under the Observatory, on the same level. But, as we had about 12 feet of gravel on top, it has never settled.

The next point I will consider is the relation of building party walls, or building walls all on one side of a party line, as is frequently the case in this city, where the two adjoining parties cannot agree to build a party wall. In this my experience has been varied. It is contended by some architects that it is not safe to build important buildings all on one side of a party line, and utterly impossible to do it permanently. I find that some architects have had a sad experience in attempting the construction of walls on one side of the party line. I don't wonder that such parties think so. I have been called upon to bring into line, and to a vertical position, walls of large buildings which were built all on one side of a party line, and the walls leaned over to an alarming extent. To right up such walls, and hold them, you will admit is a much more difficult undertaking than it would have been to have properly constructed the wall and building in the first place. Still I have accomplished such things. I have also built walls all on one side of the party line of some of the highest buildings in this city. This was after I was told by a prominent architect that it could not be safely done. It is a well-established fact, however, in the laws of mechanics and engineering, that where a known force will be exerted in any one direction, like the inclination of a wall built all on one side of a party line, is to push out and over. That such an inclination can be successfully resisted by applying mechanical forces in an opposite direction, there can be no question among scientific men. Upon that theory I am willing to stake my reputation as an architect. But to say it cannot be done, is admitting more than I should want to acknowledge. Some of the worst results from faulty designs and improperly constructed foundations I have ever known, has been from designs of highly educated young architects, who, from the want of experience, made total failures. I say experience, because they had a scientific education, and the same parties afterward have become eminently successful. So that you young beginners need not give up if you at first meet with rebuffs and failures in some of your undertakings. But guard yourselves against committing such glaring blunders as many architects, well versed in the principles of construction, have done in our large cities. Do not be so self-conceited as to believe you know everything. If you have doubts, don't be ashamed to ask advice of some of your brother architects. Architects hold a very responsible position to

their clients, and to the safety of the public. We cannot be too careful. It is not infrequently the case where an office is over-crowded, in the best regulated offices, where matters are pressing hard upon the principal architect, that oversights of some important points in the construction of large structures, will be made, and a disaster, or a very expensive remedy will be the result. This has been the case in our eastern cities, and by some of the prominent architects, and it may occur here in the West. Hence, I say, everything should be fully considered and reviewed.

Gentlemen, I thank you for your attention.

## Hints on a National Style of Architecture.*

BY ISAAC HODGSON, MINNEAPOLIS, MINN.

IF possible, and we think it reasonably so, we should have a style of architecture that can be distinctly recognized as American. To accomplish such a desirable object we cannot wholly discard precedent; we can, however, select, combine and improve to an extent that will entitle us to a style which we can call our own.

Perhaps some of you will say that that is just what we are doing, and also pressing the good work. If so, allow me to suggest that you are laboring under a serious mistake.

It is manifest that individual effort is being made in a very indefinite way, and without any system or co-operation whatever, to accomplish something new—fresh in architecture. Yes, truly, some of it is so very fresh that I trust you will all heartily join in the application of at least a little attic salt, which, perchance, will render some aid in saving our future architecture from whimsicalities and becoming obnoxiously offensive to good taste and understanding. A radical change and improvement is manifestly now in order. And to acknowledge our inability to effect the desired reform will be a virtual admissiion that we are mere dolts, cheap draughtsmen, only doing the bidding of mammon.

Cannot we control, educate and thoroughly cultivate the taste of the votaries of the fickle god, and thus remove as rapidly as practicable the odium that now attaches, and that is sure to follow, if we refuse to discharge our manifest duty. Yes we can, if we will; but never, I fear, by individual effort. To be successful there must be unity of action, and to effect this there must be organization, and such organization should naturally grow out of or spring from the Western Association of Architects, composed as it is of members fairly representing every recognized school of architecture in the civilized world, men of great and varied attainments and ability, and of every degree of culture and refinement. Just the material requisite and necessary to accomplish the object in view, and it does seem that true patriotism alone should stimulate all to promptly move in this important matter.

The field is broad and open, and contains unlimited resources to be rounded into form for the comfort, pleasure and gratification of every citizen, and the honor of the great republic. Yes, a country which, it seems, is vastly superior in all material things; aye, and I might say in mental capacity, to Greece and Rome in their palmiest days, notwithstanding the enchantment lent by distance.

Now I hope you will not misunderstand us, for we do not undervalue the vast results achieved by our ancient brethren of the so-called classic period. They certainly accomplished wonders in their day and generation, and indeed there still exist in this and every other civilized country many noble specimens of humanity, mighty men of thought and powers of intellect, who can see no excellence in anything pertaining to architecture except those classic, and, we might add, Gothic models, which as typical styles have filled pages of school and other books time immemorial, and are still descanted upon by professors of art and literature, just as if legitimate architecture had its birth, growth and perfection in the land of Greece, and to be proficient in the art we have only to carefully and correctly copy the examples handed down to us from a people whose lives, talents and energies were largely employed in creating and establishing a mythology and erecting temples to the gods thus created. Base indeed is the man who can be satisfied to occupy the humble position of a copyist, no matter by whom the originals were prepared—aye even if they had been prepared by the gods themselves, if that were possible. We recognize no Olympus and no Olympians now, and bow before no mythology, therefore need no temples for or to the mythic gods.

Ours are the real temples, those of science, scientific pursuits, art, commerce and manufactures by which peace, prosperity and happiness are brought to the greatest of all temples, our homes, where we can humbly bow to the great Jehovah, whose voice is that of science, and which is now heard in thunder tones throughout the civilized world. This is the voice which it is our bounden duty to obey.

Previous to the Christian era, when the domestic temple and its happy influences were in the far distant future, and during the mythologic period, which was but the dawn of a higher and happier faith and civilization, and also of the happiest and highest civilization, that in which we are so signally blessed, all nations and people seem to have performed the work which in the providence of the Grand Architect of the universe, in the evolution of ages was allotted to them. Yes, patiently and no doubt conscientiously they labored, built and constructed under the best light given them during the time in which they lived, and for purposes which, doubtless, to them were dear and sacred, but which to us have little importance except the art involved in the process.

And we know you will all heartily join in honor to our brethren of all ages who so faithfully labored, and whose lives were devoted to the cause for which we are here in convention assembled.

I am sure we will always stand ready to do honor to all our brethren who have crossed the Rubicon, and also to the memory of all those who have finished their labors and passed on to the immortal land, and while we continue to revere the memory of the fathers of our art, let us not forget to do justice to ourselves, whose lives should be practical and real, leaving to the greatest possible extent the ideal with the past, where it certainly ought to belong.

From the foregoing general remarks it might possibly be surmised that we are somewhat opposed to classic architecture. Such a supposition would be a gross mistake; the contrary is the fact, for we are in favor of the best, most refined and purest of everything, but first we are in favor of fitness, for without this requisite quality there can be little or no excellence.

Now, the fitness of things is just what concerns us most. All who have read the history of architecture from the earliest ages up to the last century ought to know that every nation and people of every denomination, through their architects, earnestly labored and frequently under adverse circumstances, to invent, design, arrange, erect and complete their structures to properly meet their necessities and requirements, hence the evolution and also variety of styles, for each style is peculiar to the nation or people giving it birth. And each has been duly honored by the entire civilized world. Some originated, and some adopted and combined, hence the styles. Renaissance or transition styles, which indeed brought far greater honor and glory to Italy, France and other countries than did all their blood-bought victories. It is the peaceful arts that make nations really and permanently great and prosperous.

Just now allow us to remark that we have neither time nor space for a regular old style dissertation on Greek, Gothic and other styles of architecture, and as old style things are of secondary importance here, we must confess that we have little or no inclination. Our age is a glorious reality, strictly a practical age in which we are all expected to do our duty, which to perform creditably is a task of no mean proportion; it should, however, be done with alacrity and in the true spirit of patriotism.

To meet the practical demands, and also the present desire for art novelties, we must stretch every nerve to obtain the greatest results in the simplest, most economical, scientific and artistic way. This is the only course that will enable us to successfully combat the bold empiricism which has so long usurped the place of architecture, and for which we as a class will be held responsible. Indeed our neglect of remedy application is having its direful effect already. The argus-eyed press critics are in the field, and with their general good common sense and ready pens, we may soon expect to hear from them in a way that will make us feel the necessity of prompt and vigorous action.

It is, perhaps, unnecessary here to explain the reasons why this country has not been generally more successful in the application of means to ends in the fitness of her architecture. Suffice it to say, however, the fault does not lie with the legitimate architects, but should be placed where it rightfully belongs as above intimated.

Fogyism and mutual admiration societies belong to the past. Today the great army of reform is gallantly marching forward with science, art and manufactures inscribed upon its banners, and of all men and professions we should take the front rank.

Our brothers in scientific pursuits, the noble army of civil engineers, are, if you will allow me the expression, keeping time to the music, and grandly performing their part in the march of progress and reform. Far greater interests depend on our efforts. For these many years, in this great country of ours, hundreds of millions of dollars have been expended annually in the erection of every class of buildings, some of which, indeed, are highly creditable to our profession and country. But, alas! what shall we say about the remainder? Just what the English architect told the lawyer, who inquired the name of the architect of the tower of Babel,—there was no architect employed on that celebrated structure, hence the confusion.

Now, from the above, as well as from our own knowledge of the facts in the case, it seems that the services of the architect are absolutely necessary to prevent confusion. Yes, and they are also necessary in the proper construction and erection of all new and beautiful forms out of nature's created matter.

And no intelligent person would think of expending any considerable sum of money in the erection of private or public buildings whatever without the services of the architect, which, indeed, are now generally acknowledged to be indispensable. The ends, however, may not always justify the means in the selection, and this fact alone justifies the presumption that the legitimate profession will always be held responsible for every architectural abortion, no matter by whom erected.

It is absolutely our duty then, and we owe it to the public to at once proclaim a higher standard, and proceed to establish a modern school based on rational principles exclusively, the title of which should be: the Amercian school of architecture. Only members of the Western Association and American Institute of Architects, in good standing, should be admitted, and they should be required to pledge themselves, say, as follows:

1. That they will faithfully and honestly, to the best of their ability, endeavor to improve the civil architecture of America, and that they will render all the aid in their power in the introduction, development and perfection of the national style of architecture known as American.

2. That in doing so they will, in the construction of buildings of every class, be wholly governed by the laws of mechanics or scientific rules on the subject.

3. That they will confine themselves as far as practicable to such simplicity and breadth of design as will produce the longest unbroken perspective lines, the greatest dignity and repose in all their works.

4. That they will carefully study and practice economy, using only such quantity and strength of materials of whatever kind as shall be warranted and justified by the accepted authorities on the subject.

5. That they will strictly observe the law of practical fitness, excluding all barbaric crudeness, massiveness and severity, and give a truthful and spirited expression of purpose to all their creations.

6. That in the matter of fenestrations of every structure they will introduce any and every form of arch and lintel that will serve convenient, practical and æsthetic purposes.

7. Regarding columns, pillars, etc., that they will introduce parallel

*Paper read before the convention of the Western Association of Architects, Chicago, November 18, 1886.

shafts, and regulate their height by the safe value and measure of the material employed in their make-up to safely sustain the superimposed loads, and that, when in order, they will boldly and gracefully mold their bases and capitals, enriching the latter with spirited carvings representing native fruit, flowers and foliage, or geometrical pattern, or both.

8. That in all lintels, archivaults, vousoirs, etc., the actual known value of the materials used to sustain their own and superimposed loads shall be their dimensions.

9. That they will not project belt courses, cornices, copings, pediments, gables, etc., over the sustaining wall-line to a greater extent than that which is necessary for protection, and when enriched, ornamental purposes.

10. That in the roofs and chimney-shafts, parapets, etc., of all their structures they will endeavor to produce the best picturesque effects in the most unpretentious and monumental way, avoiding unnecessary breaks, and, as far as practicable, unequal angles in the roof contours.

11. That when dormers are introduced they will endeavor to make them important, not numerous features, and gracefully embellish them to properly relieve the broad roof surfaces.

12. That they will introduce no exterior decoration except that which is necessary to properly accentuate and relieve broad plain surfaces, using geometrical patterns, native plants, foliage, fruits and flowers, and appropriate selections from the animal creation for the purpose.

13. That they will in all interior decoration and finish endeavor to produce harmony with the exterior, except where it may be necessary to vary for special and convenient purposes.

Now in this way we might proceed indefinitely, for the subject is ponderous and of almost unlimited scope, requiring equal powers of mind and force of will to shape and place it before the profession, where it can be properly treated.

It is perhaps unnecessary here to add that the members of the proposed new school would, and should, be at liberty to practice in any other style, giving, however, the preference to the new.

## Sewer Gas.*

BY C. F. ILLSLEY, A. AND C. E., ST. LOUIS, MO.

TEN or a dozen years ago the general public knew as little about sanitary science, so-called, as about the dusky tribes or Central Africa, and cared less. The most gruesome of all specters which disturb modern homes, sewer gas, was then unknown, and happy in that ignorance which was bliss, many a head then rested peacefully on a pillow where it now tosses in anxious fears of a pestilence which is supposed to walk both by night and day.

In those primitive times people lived, or existed, in a manner which, from our more sanitary standpoint, is almost shocking to contemplate. Sewers were rare save in large cities. Everywhere else kitchen and family slops were usually thrown out upon the ground at the side or rear of the house, or into the street in front, and there left to dispose of themselves. In the city of New Orleans, La., and in most of our suburban and country dwellings, this is still the custom.

The midden, or "leaching cesspool," as we now call it, was almost universal, and generally formed a prominent feature of the landscape at the rear of the house, where it disputed the honors of the back yard with the family well. At times it stood in closeness of proximity to both house and well, which it is now positively unpleasant to remember. This feature still survives in Baltimore, and to a considerable degree in Philadelphia, not to mention smaller places, and is today almost the only arrangement known in Paris and other European cities, which nevertheless report a very low mortality rate.

Heating furnaces, in those unsanitary days, drew "*fresh air*" from the nearest and most convenient point, with little solicitude about the purity or sweetness, even though it came from a cellar odorous with dampness and mold, with mellowing turnips and rotten cabbages. If the cold air duct failed to open near a leaking drain or cesspool, it was a matter of accident as much as of precaution. The bathroom was oftenest placed in the center of the house, in that space which from lack of light and ventilation was thought fit for nothing else. It derived air and light through the one door which opened into the main hall, and through the same opening it probably gave back as much air as it received, if not quite as fresh. In the matter of freshness, however, there was not always much to choose between the front hall and bathroom. When this apartment had been fitted with a copper-lined, wood-encased tub, a marbletop basin and a pan closet and a cast-iron soil pipe from the drain in the cellar had been carried up inside and nicely capped under the water-closet seat and the whole apparatus decorously encased and concealed from view, it was thought that the perfection of convenience, comfort and luxury had been reached. No one stopped for a moment to question its salubrity, and, indeed, it must be admitted that a very large proportion of the houses so built were, in view of modern sanitary teachings, unaccountably healthful.

Finally, the uncovered well supplied the standard of wholesomeness and purity in drinking water, and we may yet recall a ballad of wide popularity, which praises the health-restoring virtues of a cooling draught from

> "The old oaken bucket,
> The iron bound bucket,
> The moss covered bucket,
> That hung in the well."

But now all is changed. The external conditions of health and disease, of epidemics, malaria and contagion have become a study, a new science of sanitation is evolved or being evolved, and a new profession, that of the sanitary engineer, is already beginning to bid for public favor, and in some cases to dispute with architects the right to plan and superintend house construction. Soil pipes must now open at both ends and extend into the open air far above our house tops. Traps of every shape, material and style are advertised, the pan closet has been discarded for a multitude of new forms, as siphon closets, valve closets, washouts and others, trap ventilation, receiver ventilation and drain ventilation are advised, and the comparatively simple plumbing of early days has been supplanted by an elaborateness of apparatus which is complicated, delicate and correspondingly expensive, while difficult to construct and maintain.

There is an equal change in popular sentiment, which has been awakened and alarmed, and has vibrated from a state of thoughtless indifference to as thoughtless solicitude. This is largely due to the writings and lectures of active workers and acknowledged authorities, such as Chadwick, Hellyer, Buchan and others in England, and, in this country, Waring, Wingate, Philbrick, and the *Sanitary Engineer* journal, of New York, but more than all to the alarming accounts of sewer gas poisoning, from no responsible source, which fill the daily papers.

It matters not that these accounts are mostly unverified or rest on *ex parte* testimony which has never been sifted, and would not for a moment endure the scrutiny of legal inquiry. They serve their purpose in providing the public with sensational reading, and hitherto there have been few or none to come forward and challenge their veracity. The public seldom thinks to inquire just what this terrible sewer gas is or how it is generated. It is enough to believe that it is something which *grows* in the sewers, somehow, and then gets into people's houses and makes them sick.

It is probable that this notion is fostered at times by the thoughtlessness, or worse, of physicians, who know very little more than their patients about sewers or their contents, but who find that sewer gas makes such a serviceable explanation for symptoms not readily accounted for otherwise, that they are tempted to resort to it often on slight evidence or none at all. Surpassing charity herself as a coverer of sin, sewer gas is also rapidly supplanting that "Mysterious Providence" which used to afflict humanity in the olden time. This matter occupied the attention of the California State Medical Convention recently, and one of its members openly declared that the medical profession seemed bent on proving "that sewer gases are the real causes of every type of disease," also that "the medical mind is biased in favor of and accepts this *as the readiest solution of the question*."

In the seventeenth century, the Paris doctors used to say that people who entered its sewers were killed by the stare and poisonous breath of a *basilisk* which lived in them. Two hundred years later, this "chestnut" is revived, only now the basilisk is called sewer gas, and is said to come out and slay its victims instead of waiting for them to enter the sewers.

Never was popular delusion more inconsistent in itself. For instance, diphtheria appears in a house and is charged to sewer gas. Were the same logic employed here as in other matters, or any logic at all, people would reason that if sewer gas were the true cause, the same gas would produce diphtheria in other houses when present, or some disease of the same *genus*. But there is scarcely a malady in the whole catagory, from meningitis to mumps, that is not ascribed to sewer gas. The universal cure-all is yet to be discovered, but the universal cause of disease is now unveiled. Whether it be asthma or anæmia, bronchitis or baldness, croup or catarrh, erysipelas or earache, fevers or fits, goitre or glanders, it is all charged to sewer gas. What a wonderful simplification that introduces in pathology!

There used to be this rule among pupils studying grammar: If you can call a word nothing else, call it an adverb. The rule has now got into sanitary practice, and reads: If you cannot explain a symptom in any other way, charge it to sewer gas. At the sanitary congress in Vienna, five years ago, Dr. Lissauer, of Dantzic, referred to this reprehensible practice, and remarked that "cases of diseases attributed to sewer gas entering the house through defective pipes are really due to prevailing epidemic influences rather than to direct infection."

The daily press is full of sewer gas, fuller than the sewers! Is there sickness at a boarding school, or a summer resort, or on a family's return to their city home, the papers announce the event as "another case of sewer gas." Does the secretary of the treasury weary or lag under the weight of his duties, sewer gas again. It matters little that there has been sickness at schools and hotels, and in city homes or in public office long before sewers were built or sewer gas born; the explanation is none the less convincing. An eastern architectural paper prints a column of frantic fiction about the dreadful antics of sewer gas, and closes with the following rational advice: "Strip your bedrooms of all plumbing whatever; let no sewer connection of any kind come into a sleeping room; go back to the clean, old-fashioned bowl and pitcher, and be content with good health."

This inconsistent and crazy delusion may at any time take a turn which would be dangerous to our profession. Let fatal sickness occur in a new house, for example, and be laid to sewer gas, and then let some sanitary theorist come in to examine the plumbing, and to exalt his profession by finding grave fault with the plumbing because this or that fixture or refinement has not been introduced. What, then, will stand in the way of a suit for damages against the architect who planned and constructed the house? In the present state of the public mind about sewer gas, such an architect's chance with judge and jury might be exceedingly precarious, and it would avail little for him to show that no substantial proof had been adduced of the presence of disease germs in house or sewer prior to the attack.

Moreover, some of our most experienced and most judicious architects would be the most exposed to this peril. Viewing the matter of household sanitation from the standpoint of a practical architect rather than that of a zealous reformer, they regard with mistrust the tendency of extremists to elaborate and multiply pipes and fixtures indefinitely, knowing that every complication increases the cost and difficulty of construction, and the uncertainty of its permanent efficiency. Pipes intended to ventilate traps are apt to clog and cease to act, or, if operative, to hasten the unsealing of the traps by evaporation. Ventilating shafts are liable to down drafts as well as to upward ones. Shreds of cloth and fibers catch on the bend of traps and transfer their contents back and forth by capillary action; wave motion farther unseals them, and, finally, we are told that trap water is soon permeated with gases, and gives them off freely at the other side. Sanitary practice is still rudimentary in its development, and prudent architects are prone to select the simplest apparatus whose value has been estab-

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lished by experience. They are therefore especially exposed to the condemnation of professed experts and reformers in sanitation.

It is an old saying, that there must be fire where there is smoke, but seldom has there been so little fire for so much smoke as in the sewer gas scare. Strictly speaking, sewer gas is a myth—it does not exist, save in the imagination. It has no more place in the chemist's vocabulary than has barnyard gas, or school gas, or church gas, or factory gas. Where sewers are modern and well built, with a good fall and free discharge, the air in them is not likely to differ very much from that above, except in excess of dampness and a staleness arising from deficient ventilation. It is probable that such air can be breathed quite as safely as the air of an ill-ventilated, stuffy workshop, or steam-heated office, or a crowded assembly room. In St. Louis, a force of men is regularly employed in the sole duty of cleaning out the sewers. Most of their working hours are spent within the sewers or around them. According to popular notions, these men should be the marked victims of disease. In fact, there is not a healthier corps in the city employ than its sewer cleaners. In over thirty years there has been but a single death among them. The same thing is true of the sewer cleaners of Paris, who have enjoyed remarkable immunity—even in times of epidemic.

The air in foul sewers has been subjected to chemical analysis, and found to be very much like other air, with an excess of moisture and carbonic acid, and traces of ammonia and sulphuretted hydrogen. This, indeed, would not prove its salubrity, since contagion defies the chemist's search, but it shows that there is no special substance which can properly be called sewer gas.

Nor is the sewer air always pouring into people's houses, or trying to. Numerous tests of the sewers of Munich, Germany, showed that this draught was generally down the sewer instead of into the house. The tendency was to follow the stream of sewage in its course.

A disagreeable or novel odor in a house is often taken as a sure of sign sewer gas, and unnecessary alarm occasioned. Often enough, the fault is in the hot-air furnace. In Brooklyn, N. Y., three cases of malarial fever were reported in one house, and sewer gas was plainly indicated. A plumber came, therefore, and ripped up the plumbing throughout, but without curing the odor, till he chanced to open the cold air duct to the furnace, when the source of the sewer gas was discovered in the decaying remains of a cat and several rats.

An occasional source of peculiar odors in churches is thus complained of by a Boston clergyman: "The sexton frequently chews tobacco, but whether he chews or not, he invariably uses the register of the furnace as his spittoon. I almost never enter a church or public hall in winter without catching the disgusting odor of burning spittle. Do you know of any mechanical contrivance to be applied to the sexton, to prevent him from spitting down the register?"

Similar illustrations could be multiplied indefinitely to show that when strange odors are discovered, they are more than likely to originate within the premises themselves, and not in the public sewer. In a Chicago residence, a drain became choked with rags, and its contents backed up and overflowed into the cold air duct to the furnace, and thence entered the house.

Were further evidence needed of the unreasonableness of the popular scare about sewers and sewer gas, it could be found in the sanitary statistics, which show that instead of poisoning a community, sewers are conservators of health. In every city where they have been provided, a great improvement has at once appeared in the health reports. For example, the first sewer in St. Louis was built in 1849, the great cholera year. In the next five years there were five successive cholera epidemics, and people began to think the disease had come to stay. Since then, cholera has visited the city but once, and then in a mild form. In Munich, Germany, the deaths from diphtheria in 1880 were most numerous in the unsewered districts, and the same was observed in the epidemic of typhus fever, in 1875.

Country towns, being without sewers, must, strictly speaking, be free from sewer gas. But the sewer gas diseases, so called, are as active there as in cities. A correspondent of an eastern paper thus tells of his country life:

"In 1862 and 1863, I occupied a place in ———, on Long Island, overlooking the noble Sound. Before I went there I took the assurances of several distinguished divines, lawyers, physicians, bankers, merchants and officials who lived there that that particular locality was exempt from chills and fever, though they had it like blazes at ——— and ———. The result was that, leaving me out, my whole family, my servants and all friends who visited us, and I sometimes thought my domestic animals, except mosquitoes, had the disease. I raised such a clamor about it that I was threatened with a ducking in the noble East river, and dared not go back there to live, or to die, rather. I escaped by taking quinine as regularly as I did my meals."

One consequence of this practice of exaggerating the poisonous nature of sewer gas and the assumed difficulty of guarding against it, may be to exalt the office of the sanitary engineer at the expense of the architect and to open the way for the encroachment of the former on the architect's province of designing and constructing buildings. An eastern building paper has already suggested that a government board to select designs and control the erection of public edifices would not be complete without a sanitary engineer to look after the plumbing and drainage, since architects were not competent to perform this duty properly. The same journal has attempted to fortify this accusation by citing several state capitols and other buildings whose plumbing is pronounced defective, when it is notorious that all the best buildings in the country, with scarcely an exception, are the work of architects throughout; that the old buildings cited were, undeniably, on a par with the sanitary knowledge of their day, and that the defects now observed have chiefly been noted and are now being corrected by architects.

In view of the foregoing, it seems clearly the duty of architects to give their serious attention to the sewer-gas scare and its possible consequences. Those who are in any respect unfamiliar with modern plumbing, its nature, methods and requirements should inform themselves without delay by the study of standard authorities, conference with intelligent master plumbers, and diligent inspection of work done under their own observation. Then let them observe the empty character of the prevailing delusion and exert their influence to abate it by explaining, as occasion may offer, the operation of sewers and the usually innocuous character of the air within them and the efficiency of the means generally employed to shut it out of houses. Particularly should they beware of assenting to the assumption that architects are no longer competent to direct the plumbing of modern houses without the assistance of a professional sanitary expert.

Twenty years ago, when the science of ventilation occupied the public attention, it was the custom to talk about the deadly carbonic acid gas much as people now talk about sewer gas; and a good deal of sickness was ascribed to it which we now believe had some other origin. A similar termination may be anticipated to the sewer-gas fright as people become better informed about sewers and their workings and perceive how little foundation there is for the sensational talk which is now so common.

## Hospitals for the Insane.*

BY E. H. KETCHAM, ARCHITECT, INDIANAPOLIS, IND.

TO me has been assigned the duty of discoursing upon the subject of Insane Hospitals, not because my sanity is in question, I trust, but on account of my connection, professionally, with the erection of what is to be known as the Northern, Eastern and Southern Indiana Hospitals for the Insane.

The necessity of additional hospitals became apparent when it was known that of the two millions of people within the boundary of the state, 3,530 are insane, or one in every 558. (According to Dr. Kiernan, I find that the ratio of insane for Cook county, Ill., to be 1 to 390.)

The nearly completed hospital at Indianapolis would accommodate 1,400; there were in jails and poorhouses 800, and at home 2,000.

To give an accurate definition of insanity would require a detailed account of each individual case, so great is the variety.

I can give only as a guide, one of the many to which my attention has been called, viz: "A condition of the mind in which a false conception or judgment, a defective power of the will, or an uncontrollable violence of the emotions and instincts, have separately or conjointly been produced by disease."

You are fully as well posted with the antiquity of this disease as I am. In the early ages the masses believed recovery impossible, and had the unfortunates confined in dungeons and prisons. In later years those who were deeply afflicted were confined in jails and almshouses, while those of a milder type, such as quiet, harmless and working lunatics were given to the care of cottagers.

The hospital systems in use at the present time are:

*First:* The corridor system.
*Second:* The house system.
*Third:* The pavilion system.
*Fourth:* The cottage system.

*First:* The corridor system is in most general use. Formerly it consisted of a very wide corridor with bedrooms or dormitories on either side, with bathrooms, wardrobes, water-closets, parlors and dining rooms close at hand; frequently a portion of the corridor was used for dining rooms. It is easily observed that the lighting of such a system would be very imperfect.

A change has been made, especially in England, so that the corridor occupies one side of the building and the bedrooms or dormitories the other.

Dr. Kirkbride, of Philadelphia, for many years at the head of the Pennsylvania Hospital, made a decided change for the better, introducing what is now known as the Kirkbride plan. This consists of wards arranged *en echelon*. The ends of the corridors terminate in large windows and often intermediate, a few bedrooms give place to neat alcoves. This gives light and air and produces decidedly more cheerful quarters for the patients by day. Wards are connected at the corner with adjacent wards by means of a hall commonly made fireproof, through which ingress or egress can be made, or communication from ward to ward.

Some of the best of the Kirkbride plans can be found at Danvers, Mass.; Indianapolis, Ind., and Pontiac, Mich.

In all American institutions the administration quarters are located at the center. To the rear will be found the boiler house, laundry, shops and other necessary buildings.

*Second:* The house system has a more complete separation of day and night rooms. During the day the patients are quartered on the ground floor, while the second floor is used entirely for dormitories. When patients are unable to ascend the stairs, sleeping apartments are provided on the ground floor.

*Third:* The pavilion system is essentially the same as the house system, being more extended in its parts, however.

*Fourth:* The cottage system consists of a number of small buildings, with accommodations for fifteen to twenty patients, made in all respects and general character of design like private dwellings.

Of late, a strong tendency has been to do away with restraint—to indulge the patients as much as is practicable and to give them employment, that their minds and bodies may have exercise. In the three Indiana hospitals, this consideration has been carried beyond that of former institutions. Great effort has been made to make each one a home, not a prison.

In the selection of sites, farms were purchased susceptible of cultivation, beautiful in topography and surroundings, 281 acres for the Northern, 306 for the Eastern, and 160 for the Southern.

It is the intention to employ those who are able, in the working of the farms, in the kitchen, laundry, boiler house, and as housekeepers.

* Paper read before the third annual convention of Western Association of Architects held at Chicago, November 17, 1886.

In each instance, where restraint has been removed, a more cheerful disposition has developed in the patients. In a visit which I made to the Alabama Hospital for Insane, at Tuscaloosa, where this idea is carried out, with the exception of the few sick ones, I found it impossible to discriminate between the patient and attendant.

The pavilion system was selected for the Northern Hospital, near Logansport.

The cottage system, for the Eastern Hospital, near Richmond.

And the congregate radiate house system for the southern hospital, near Evansville. This system has often been used with success for prisons and libraries, but never before has it been undertaken for insane hospitals.

The Northern Hospital, a group of two-story detached buidings, occupying a high bluff overlooking the Wabash river. The center building is devoted to the use of the administration. The first floor is set apart for offices and public reception rooms; the second floor to the living apartments of the superintendent, his family, and the assistant physicians. To the east, for women, and to the west, for men, is a series of five buildings, separated from each other by an open space of fifty feet.

The first pavilion, known as No. 1, east and west, is set apart for the reception of patients, who are quartered here until they can be classified. A hall extends the full length, with bedrooms, bathrooms and wardrobes on either side. At the center on the north side or front, is a dining-room, with necessary scullery; to the south side a large "day room," or a room set apart for the day life of the patients; two small parlors are provided where the patients may be entertained by their friends, a loggia for open air exercise, during the summer, which, during the winter, is closed with sash and glass, giving additional accommodation.

Pavilions Nos. 2, 3 and 4, east and west are duplicates in plan and design, and are set apart for the convalescent, demented, suicidal and epileptic cases. It is in these buildings that the second floor is used for dormitories, and the first floor for "day rooms."

At the extreme ends are pavilions Nos. 5 east and west, for the noisy and incurably insane, each of which has an independent bedroom.

Each of the above-named buildings is provided with bathrooms, wardrobes, water-closets, dining "day rooms" and attendants' rooms, from which a strict watch can be had over the patients.

To the rear of the administration building is a large building for the employés, main kitchen, bakery, refrigerator, and amusement hall (a neat little theater), for dancing and other amusements.

A laundry with all modern improvements, and a boiler-house of four one hundred horse-power Babcock and Wilcox boilers; a sufficient room for the necessary engines and electric lighting occupy a lower level, to the extreme rear.

The Eastern Hospital.—The cottage system is yet somewhat of an experiment, especially where the cottage idea is so fully developed.

The cottage system of other institutions are what we term the pavilion system of the Northern Hospital. Here every effort is made to imitate the dwelling house as far as possible, differing only in that the small bedrooms give place to dormitories.

The main group consists of four buildings about an open court; at the center and a little to the front is the administration building, differing from that at the Northern Hospital only in plan and character of design. To the right and left are two wings; east for women, west for men. They are counterparts of each other, and serve the same purpose of pavilions No. 1 east and west, at the Northern Hospital. The kitchen, employés quarters, amusement halls, etc., form one building in the rear, which is essentially the same as the rear wing hereinafter described as the rear wing of the Southern Hospital.

To the rear and beyond the ends of the main group to the east and west, is a series of cottages, arranged and classified as the pavilions of the Northern Hospital. The boiler house and laundry form the center, and are in architectural construction the same as those for the Northern and Southern Hospitals.

The Southern Hospital, a three-story building, consists of a center building, 59 by 102 feet, from which six wings radiate, at an angle of 60 degrees. To the south is the administration building, separated from the main building on the ground floor by an open driveway, and connected with the main building on the second floor by a covered corridor.

The administration building, while differing from the above-named hospitals at Logansport and Richmond in plan and design, has the same use. The center building is so divided that there are four offices in the four corners; patients' reception room, matron's and steward's rooms, and the dispensary. A corridor ten feet wide separates these offices and side walls, from the foundation piers of the dome. At the north end of the dome is a broad slate stairway, leading to a platform, then to the right and left landing on the second floor, at the foot of stairways, leading to the third and attic floors; under the main stairs access is given to the basement.

The southeast and southwest wings are counterparts through the three stories; a small hall communicates to a dining-room, 20 by 32 feet, off of which is a large scullery, communicating with the basement by hydraulic hoists. Passing through the dining-room a long corridor is reached; on either side are bedrooms for the patients, wardrobes, bath and attendants' rooms. The corridor is placed to one side of the center, in order to give single rooms to the refractory patients, while the mild and quiet are given small dormitories where they may sleep. The attendants' room and bathroom are in direct connection with the "day room," which occupies the extreme end of the wings.

At the outer corners is a parlor, and the stair hall communicating with the wards and garden or court below. A loggia between gives additional room for the free use of patients. An air duct is extended from the basement to the dome above, that fresh air may be brought from the open air to the basement where it is warmed and sent to the rooms through air ducts in the walls. In no instance does the warm air enter the sleeping rooms direct, but into the corridors, then to the sleeping rooms through open panel doors. At the far end of the rooms shafts are provided whereby the foul air is taken to the attic, whence it is expelled into the open air.

The fourth story of the "day room block" is used as dormitories for employés.

The wings to the northeast and northwest, differ from those described, in that they are set apart for more quiet patients, and the sleeping rooms give place to dormitories.

The rear wing to the north, contains officers' and employés' dining room, kitchen, sculleries, sleeping rooms, and amusement halls. In the basement under the amusement halls, is the main kitchen and serving room, with refrigerator and bakery on either side, while store rooms occupy the remaining space. The portion of the second story not used by the amusement hall, is given to employés' sleeping rooms.

In the upper portion of the dome, ten water tanks of 2,000 gallons capacity each, are placed, from which water is distributed through the building.

Water-closets wherever used, are placed without the building and connected thereto by a small passage, rendering it impossible to the introduction of foul air.

The boiler house and laundry are independent buildings, located to the rear of the main building some ninety feet, and are equipped as that described at the Northern Hospital.

The construction is not over massive, yet every effort has been made to secure proper strength. Hard blue limestone foundation to the grade line; a neatly bush-hammered water-table divide it from the heavy brick walls above; in no instances are there brick walls less than thirteen inches. Flues for hot and foul air nine inches thick.

Stud partitions are studiously avoided, yet a few occur for closets; they consist of 2 by 4 inches dressed studding laminated.

The floors are of 2¾ by 8 inches dressed material, beaded and slip-tongued, laid flat, and supported by substantial beams. Walls are corbelled to receive the wall-plates. The base, of 4 by 4 inch oak, coved, that all dust and dirt may be easily removed. On top of this massive floor is placed the deafening, then maple flooring in narrow strips; the roof is similarly constructed of lighter material, forming the well-known slow-burning fire construction. Brick row lock-arches of red mortar and frequent pilasters; panels, belt courses, hip and ridge coping, finals, and gutter mold, each of terra-cotta and slate roof, form important features.

The interior finish is of oak, oiled. The interior brick walls, except those of the Administration building, officers' dining room, and the small bedrooms for patients, are painted, producing a very pleasing effect. The paint prevents the absorption of disease germs.

Open panel doors are used in order that the patient may not be disturbed by opening and shutting of doors.

The iron sash and bars have given place to strong wood sash, and bessemer wire screens.

Chief Webster, of the Indianapolis Fire Department, gave it as his opinion, that should a fire be started in the center of the Southern Hospital and be permitted to burn uninterruptedly, that a week would be required to totally destroy the building.

The disastrous fires of the past warn us for the future. Having such a construction, we have adopted such means as may be readily used to a great effect without serious damage to the building.

In addition to the customary hydrants and hose in and out of the buildings, chemical engines, such as city fire departments use to a great success, have been adopted. After careful examination, the commissioners have purchased what they consider the best, namely: Two dozen six-gallon Champion Extinguishers for each hospital. In addition to these, they have purchased for each, the Northern and Eastern Hospitals, a portable Champion Chemical Engine of one hundred gallons' capacity.

As the compactness of the Southern Hospital does not necessitate the portable engines, two chemical tanks or stationary engines, each of five hundred gallons' capacity, are placed in the basement of the dome, from which standpipes rise to the attic; branches at each floor supply hose of sufficient length to reach the extremes of the building. A small bell-pull at each hose box sets the tanks into immediate action, and, as has been demonstrated, twenty seconds only are required to produce a fire stream.

Heating, ventilating, lighting, sewerage, and water supply, I beg to omit at this time, yet trust I may have the pleasure of presenting to you at some future date, through the columns of THE INLAND ARCHITECT AND BUILDER.

## Association Notes.

WESTERN ASSOCIATION OF ARCHITECTS.—Convention will be held November 16, 1887, at Cincinnati. J. F. Alexander, La Fayette, Ind., secretary; W. L. B. Jenney, Chicago, secretary of foreign correspondence.

ILLINOIS STATE ASSOCIATION OF ARCHITECTS meets the first Saturday of every month, at 15 East Washington street, Chicago. Annual meeting first Thursday in October, 1887. Clarence L. Stiles, Chicago, secretary.

INDIANA STATE ASSOCIATION OF ARCHITECTS meets on the fourth Wednesday of January, April, July and October of each year. Annual meeting fourth Wednesday in October. E. H. Ketcham, Indianapolis, secretary.

MISSOURI STATE ASSOCIATION OF ARCHITECTS meets at St. Louis on the second Tuesday in January, 1887. Thomas B. Annan, St. Louis, secretary.

KANSAS CITY SOCIETY OF ARCHITECTS meets Monday afternoon of each week, at 4 o'clock. Annual meeting second Saturday in April, 1887. F. B. Hamilton, secretary.

BUFFALO SOCIETY OF ARCHITECTS meets first and third Tuesdays each month. W. W. Carlin, secretary.

THE ARCHITECTURAL ASSOCIATION OF IOWA, annual meeting, second Wednesday of January, 1887. C. H. Lee, Des Moines, secretary.

THE ARCHITECTURAL ASSOCIATION OF MINNESOTA meets every other Tuesday at Minneapolis and St. Paul alternately. Annual meeting January 4, 1887. Irving W. Kelley, Minneapolis, secretary.

KANSAS STATE ASSOCIATION OF ARCHITECTS meets at Topeka on the third Tuesday of January, 1887. H. M. Hadley, Topeka, secretary.

ASSOCIATION OF OHIO ARCHITECTS meets semi-annually. Next meeting third Thursday in January, 1887. O. C. Smith, Cincinnati, secretary.

ASSOCIATION OF TEXAS ARCHITECTS meets at Austin on the third Tuesday of January, 1887. S. A. J. Preston, Austin, secretary.

NEBRASKA STATE ASSOCIATION OF ARCHITECTS meets first Wednesdays in January, April, July and October each year. F. M. Ellis, Omaha, secretary.

THE CHICAGO ARCHITECTURAL SKETCH CLUB meets every alternate Monday, Builders' and Traders' Exchange. W. G. Williamson, secretary.

THE WESTERN SOCIETY OF ENGINEERS meets the first and third Tuesdays of each month at 4 o'clock P.M., at 15 East Washington street, Chicago.

THE MASTER PLUMBERS' SOCIETY, of Chicago, meets first and third Wednesdays of the month, 7:30 P.M., at 15 East Washington street.

### CHICAGO ARCHITECTURAL SKETCH CLUB.

The second annual meeting of the Chicago Architectural Sketch Club convened at the club rooms in the hall of the Builders and Traders' Exchange, November 8, and was followed November 15 by the inauguration of an annual exhibit of club drawings and annual banquet. On this occasion the members of the club and invited guests numbered sixty, and the evening was devoted to social enjoyment. The menu, which was furnished by Werner, was excellent, and the exhibit of drawings, about 200 in number, was a surprise to all but those who have watched the advancement of the club for the past two years.

The invitations were limited to members, the directory of the exchange and the three architects who have acted as committee upon the adjudication of club competitions.

Among the guests present were John M. Root, F. L. Blake, William Grace, Thomas Sollitt and C. U. Trowbridge. Letters of regret were received from George C. Prussing, F. S. Wright, T. C. Schonthaller, W. L. B. Jenney and George Fox. Among the members present were the following: Harry Lawrie, W. G. Williamson, C. A. Kessell, George Beaumont, J. H. Carpenter, I. K. Pond, M. H. Church, R. C. McLean, Paul Muller, Fred. R. Hirsch, T. D. Hetherington, W. R. Gibb, Frank Lively. T. O. Fraenkel, O. R. Enders, R. B. Williamson, C. W. Trowbridge, Richard Wood, R. E. Schmidt, F. L. Linden, E. J. Wagner, W. B. Mundie, C. F. Jobson, O. C. Christain, Ashton Pentecost, J. C. Coxhead, R. M. Turner, J. C. Batchen, A. C. Berry, F. L. Blake, W. B. Lord, H. W. Culbertson.

After the elaborate menu had been disposed of, President Lawrie arose, and in a pleasing manner reviewed the history of the club, its work and its objects. He spoke of the members' improvement in art and architecture. President Lawrie then announced the toasts, which were responded to as follows:

"The Architect," John W. Root.

"The Builders and Traders' Exchange," William Grace.

"THE INLAND ARCHITECT," R. C. McLean.

"*The Sanitary News*," H. W. Culbertson.

"The Chicago Anderson Pressed Brick Company," F. L. Blake.

Mr. Root's response was an unusually fine address to the draughtsmen. It will long be remembered, and merited the enthusiastic manner in which it was received.

Mr. George Beaumont in a graceful speech proposed Mr. Root for honorary membership, to which Mr. Root responded in an appropriate manner.

At the conclusion of the speech-making a varied and entertaining program was enjoyed. Mr. Enders gave an exhibition of the black art; Mr. C. F. Jobson sang "The Flying Dutchman;" a piano solo by Mr. Root; Mr. Lawrie sang the "Village Blacksmith;" Irving K. Pond gave a Shakesperian recitation; R. B. Williamson sang "By the Sad Sea Waves," and W. R. Gibb gave a humorous speech, "The Labor Question."

### MASTER CARPENTERS' AND MANUFACTURERS' OF WOOD BUILDING MATERIALS ASSOCIATION.

On Friday evening, November 12, the association held an informal meeting at which a grand lunch was spread. The evening was given over to having a general good time, and speech-making by the members present.

At the the regular meeting of the association held at 15 East Washington street at 3 P.M., November 16, President Frost presided. Attendance good.

Minutes of last meeting read and approved.

Mr. Hearson moved to change Sec. 13 of the by-laws to read "that the regular meetings of this association shall be held on the second Thursday of each month at 7:30 P.M." Carried.

Mr. Grace moved that that part of Sec. 14 relating to number constituting a quorum be changed to read, "that seven members constitute a quorum." Carried.

Mr. Cassell moved that the chair appoint a committee of three to confer with committees from all other contractors' associations connected with the building trades, for the purpose of adopting some code of working rules for the coming year satisfactory to all, and report to this association before final action.

The motion was carried, and the chair appointed Messrs. Wm. Grace, Wm. Hearson and Oliver Sollitt.

The meeting then adjourned, to meet Thursday evening, December 9, at 7:30 P.M.

## Our Illustrations.

Sketch-book Series No. 1, by Harry Lawrie. Bits of Scottish architecture.

Church for Methodist Episcopal Congregation, South Park avenue, Chicago, by L. B. Dixon, Chicago.

Hotel for Rufiner Brothers, Charleston, West Virginia, by James W. McLaughlin, Cincinnati; four stories and entresol, 100 by 157 feet; pressed brick, trimmed with Kanawha freestone. Cost $100,000.

Residence for E. B. Mix, at Aurora, Ill., by M. L. Beers, architect, Chicago. It is 32 feet 6 inches wide by 48 feet long; two stories, attic and cellar; finished throughout in clear pine, finished in the natural wood. The exterior is shingled all over; the sides with ornamental and square butt dimension shingles, half and half. The house, as planned, includes all modern improvements.

Block of three dwellings for Edwin B. Sheldon, Chicago, by Burling & Whelehouse, architects, Chicago. Colorado red sandstone is used for basement and first story and trimmings. The remainder of the walls are of dark brown terra-cotta, brick 1½ inches by 4 inches by 12 inches, made by the Perth Amboy Terra-cotta Company; bay windows and corners of copper. Cost about $40,000.

Business block for Henry G. Foreman and Henry A. Kohn, by Bauer & Hill, architects, Chicago. The building is situated on the southwest corner of Adams and Franklin streets, is 100 by 125 feet, eight stories and basement high, a total height of 134 feet from the street level. The materials are St. Louis pressed brick, blue Bedford stone and terra-cotta, slow burning construction. A light court is in the southwest corner, under which is placed the boilers and steam heating apparatus. The building was commenced July 22, 1886, and is under heavy bond to be finished January 1, 1887, which will be done. Cost about $200,000.

## New Publications.

MURAL PAINTING. By FREDERIC CROWNINSHIELD. Illustrated; price $3. Boston: Ticknor & Co.; Chicago: A. C. McClurg & Co.

The series of papers lately published in the *American Architect*, on mural painting, by Frederic Crowninshield, have been issued in book form. They present an attractive appearance, and the matter has been carefully prepared. The different methods of wall decoration are discussed historically, technically, and pictorially. The large field for mural painting is to be found not alone in temple, capitol, and theater, but in our railroad stations, public halls, mammoth hotels, costly restaurants, vast stores, etc. The dignity of mural painting makes it impressive to even the uncultivated, and "art, like religion, should be an every day affair." Mural painting, as the writer defines it, means figure work, combined with conventual ornament, or design, where free imagination dominates the rule and compass. "Decorative art" has become among many artists a term of reproach. Phidias and Michael Angelo would be much surprised were they to return at the present time and find themselves not classed among first artists. The ideal school for the mural painter must have been the studio of the Renaissance, where practice and precept were properly combined. In the chapters on "Modern Encaustic," "Durability of Fresco, and its Present Possibilities," "Oil Painting," and "Water Glass," will be found explanations of these different methods, clear to either professional or amateur, and the general reader will find interesting, those on "Byzantine, and Mt. Athos," "Oil Painting," and "Byzantine Fresco." The limited number of illustrations is owing, as the writer says, to the difficulty in reproducing the peculiar qualities of mural painting. There are, however, thirty-five small figures in the text, and twelve beautiful full-page heliotype illustrations, selected to present the finest specimens of mural work under each method, and a history of their location, merits, etc.

THE illustrated catalogue of artists' materials and drawing instruments issued by Wadsworth, Howland & Co., of Boston and Chicago, is a very neat book of 150 pages, well calculated to serve the purpose for which it has been published. It is liberally illustrated throughout, and the exhaustive lists of the almost endless variety of goods are so well arranged as to make it of the greatest practical value to the prospective purchaser. In it he can readily find all that his present needs may demand or his future requirements suggest. It should be noted that though the firm were established in Boston in 1845, their Chicago house, at 190-192 Michigan avenue, has been less than two years in existence, and is one of the late and important acquisitions to Chicago. They have recently completed the alterations in their establishment which a larger space necessitated, in order to accommodate their large stock of artists' materials, mathematical instruments, and architects' and engineers' supplies. They keep in their Chicago house a stock similar to that carried by their Boston establishment, which, as a glance through their catalogue will show, embraces a complete line of materials for oil, water color, and china painting and drawing in all its branches. In this connection special mention is made of their line of studies for flower, landscape, animal and marine painting. Through their English, French and German agents they are able not only to keep up their immense line of staple goods, but also to add all the latest novelties to be found at home and abroad. Having recently taken the agency for one of the largest foreign manufacturers of mathematical instruments, they are carrying a full line of Altneder's and Swiss makes. The special attention of artists and amateurs is also called to Le Mesurier artists' tube colors. These artists' colors are the same in first shades, and will produce absolutely the same tints as the best English tube paints, possessing superior body and strength in the body colors and unsurpassed transparency and brilliancy in the transparent colors. Altogether the catalogue is one that artists, architects, engineers and the kindred professions will find of great value as a reference book, which they can consult with profit, and from which they can order with accuracy any of the various goods in which they are interested.

## Third Annual Convention of the Western Association of Architects.

### HELD AT CHICAGO, NOVEMBER 17, 18 AND 19, 1886.

The convention was called to order by President Dankmar Adler, who read the following address:

THE PRESIDENT'S ADDRESS.

*Gentlemen and Brother Architects:*

Before opening this convention, I wish to address you as president of the Illinois State Association of Architects, and in its name to thank you for the honor you have conferred upon our association and upon this city by again gathering here from all parts of the great West to your annual reunion, and to beg you to receive our attempts at entertainment, and our tenders of hospitality, as the best that our limited power enables us to offer. We wish to assure you of our highest esteem, of our friendship and fraternal regard, and we give you a most cordial welcome. We trust that our efforts to make your attendance at this convention agreeable and pleasant may find such favor in your eyes, and that the work of this convention may be so successful, that we may look forward to a speedy return of the pleasure and honor you have conferred upon us by assembling here to-day.

My friends, seeing assembled before me the men who have made and are still making a most eventful epoch in the development of architecture, I cannot find words to express the feelings of gratitude, of pride and of self-congratulation, which force themselves upon me as I realize how great is the privilege granted us in being part, not of a Renaissance, but of a naissance in architecture. For there is surely being born into our world a new style, the style of America, the style of the civilization of the nineteenth century, developed by its wants, its conditions and its limitations, and nurtured by the best there is in the lives of you whom I see before me and of your confreres at the East.

The taunt, "Who reads an American book?" has long since been answered. The American book is read with eagerness wherever the English tongue is spoken; it is translated and read by every people possessing a literature.

Great and glorious as was the rise of American literature, the development of American architecture is still more wonderful.

Literature may thrive in a time of "plain living and high thinking," but the growth and development of architecture can only begin among a people possessed of sufficient wealth to permit indulgence in luxury and elegance. While in literature the plain liver and high thinker may, amidst privations and want, evolve from his stores of knowledge thought and imagination, pages that will circulate among and enrich all mankind, the architect cannot see the fruition of his thought and imagination without a client, nor can he acquire experience and skill to develop and utilize his gifts without a clientele. The first work of even a great author may be and may ever remain his best. The first work of the good architect never is the equal of his subsequent works. Compare Richardson's Church of the Unity at Springfield or his American Express building at Chicago with the Easton town hall, the Marshall Field building, or the Pittsburg Court House; compare Post's Troy Savings Bank with the Produce Exchange; compare Root's Riddle House with Byram House, or his Grannis block with the Insurance Exchange or the Rookery building, for proofs of this assertion. The literateur may acquire polish and fluency, and facility of expression, as he continues to write, but originality and depth of thought and wealth of living ideas are independent of and frequently in inverse ratio to the number of his published works. But the successful architect cannot take abstractions of thought or figments of the imagination and transmute them into buildings. He must take the wants and conditions, the thoughts and the feelings and longings of his client, together with the limitations imposed by financial considerations and peculiarities of environment, and collating these with his knowledge, his imaginings, his longings, apply his skill, tact and adroitness to produce a structure that shall satisfy at once client, architect, and the critical public. Many experiences and efforts implying the necessity for a multiplicity of clients are required before the architect can satisfactorily develop the mental, spiritual and moral faculties and attributes necessarily employed in such work. And that this development extend to the utmost limits, it is necessary that the individual architect have rivals whom he must emulate, and that there be among clients an emulation in the desire to erect good buildings. Hence the architect, and with him architecture, can only thrive in a community in which wealth has begun to accumulate.

Of the great American men of letters who, reared amid the hardships and primitive environments of the first half of this century, had the ruggedness necessary for the struggle which ended in the establishment of American literature as the equal of that of any country, Emerson, Longfellow, Hawthorne, Irving and Prescott have passed away, and Holmes, and Lowell and Bancroft cannot be much longer with us, and with them a glorious epoch of American history is passing away; while the newborn American architecture is still in its infancy, its first struggle for existence having begun within the recollection of almost the youngest among us, in the era of material prosperity which followed the rapid development of our railroad, telegraph and industrial systems since the close of the war of the rebellion. In fixing the birth of American architecture at so late a date, I ignore the work of the European architects who made America their home and transferred the methods and manners of their old world practice to our shores, and who reproduced the styles of other lands and other ages with academic fidelity and accuracy. Their work though good, was not American. It was engrafted upon, not rooted in the life of the American people. Such works as theirs, while requiring a knowledge of the art of building as developed among other nations, with wants, with thoughts, with means, conditions and environments different from our own, necessarily involves more or less disregard of our own mental and material wants and resources. And yet, though this work was un-American, the influence of its authors on American architecture proper was of the best. By them our own young architects were directed to the study of the best examples of the architecture of the past, and were thus given a store of knowledge of the utmost value in their task of solving the great problems set before them in this age of development and progress.

And thus the masters of the new American school show, even in their most American work, the fruits of their studies of the styles of bygone civilizations. But how free and original is the application of their European studies to the exigencies of America! How American is Post's Italian of the Produce Exchange! How American is Richardson's reproduction of the somberness and dignity of the Palazzo Strozzi in the Marshall Field building! How American the application of Indian motifs in Root's ornamentation of the Rookery Building! How American are Sullivan's reminiscences of the training of the Ecole des Beaux Arts, as reproduced in his work! And thus I might continue indefinitely, and with the results of the growth of less than a quarter century—a growth and development so virile as to have called forth from foreign critics of highest standing such remarks as this, taken from the pages of various French journals devoted to the interests of our profession:

> Thirty years ago there were, perhaps, throughout the entire United States of North America ten edifices of such natu e as to call forth the serious approbation of the European architect. What a change today! There has been progress with a speed that can only be likened to that of the locomotive running under full steam. The United States has become in the past thirty years a country where Europe should seek its models. The progress in architecture has been truly extraordinary, France, England and Germany having each had their share in influencing this growth. The traditions of Europe are for the American like an orange, from which he sucks the juice and throws away the rind. It is a question of high pressure, and the American works at high pressure. But one cannot in full justice judge of American architecture solely by the few specimens of it which we publish. Its vitality is so great that it requires many illustrations to give even a faint idea of it. We can cavil at certain details, but we must doff our hats to the result as a whole. *Chers confreres,* here is art well understood! Bravo America! Go ahead, hurrah!

But all of these complimentary and enthusiastic remarks appear to apply to our private architecture only. The authors of the various articles from which I have quoted are careful to exclude our public buildings from favorable mention. And critics of other nationalities and the most judicious in our midst agree with them. And, proud as we are of our progrees, gratifying as have been the results of our efforts in the development of private architecture, our success in that field would have been immeasureably greater if the design of the structures which are supposed to typify the dignity and grandeur of our states, our counties and our municipalites did but approximate that ideal perfection which the mind naturally assumes as one of the essential attributes of such works.

If the sprightliness and grace, the vivacity and hopefulness characteristic of the infant American architecture are to develop into virility, dignity and serenity, these higher qualities can only be attained by the application to the great civic works of the same talents, the same efforts—exerted only in greater degree—that have made our private architecture what it is. That these are not applied is evident, and to determine why this difference, why the greater and better talents and efforts are applied to the minor work, let us compare the system in vogue in the management of both classes of work. In public work we find an alleged competition, in private practice the real competition. In the first case, as the result of the so-called competition, a picture, or at best a plan, a mere shadowy presentment of partly evolved ideas, is premiated and made the basis of the work to be executed; in the other case, a living architect is selected to evolve and carry out living ideas.

The private citizen about to build seeks out an architect who has, in his opinion, distinguished himself in the execution of work of the kind contemplated by him, or he entrusts his interests to one with whom his social or business relations are such as to produce that degree of familiarity and intellectual affinity which pave the way to a mutual understanding of the wants, conditions and limitations of the proposed undertaking. Thus all conditions are favorable, the architect selected is familiar with the kind of work to be done, easily impressed and impregnated with the wants, ideas and sentiments of his client, and the resulting architecture becomes in the aggregate the expression of the material wants and artistic longings of the mass of clients, i. e., the American people, as understood and expressed by the American architect with that intelligent and artistic use of the means and appliances at his command which have excited the admiration of our transatlantic confreres. Therefore, long life to that free competition in executed work, that process of natural selection and that consequent preponderance of the fittest which have in so short a period produced such glorious results, which have given American private architecture so high a standing in the artistic world. But perish that system of mock competition which during the past quarter century has done so much toward lowering the quality of our public buildings and which blocks the way to the highest development of our architecture.

But it is by active work, not by phrases, that we must endeavor to eradicate an evil that seems so deeply rooted and as widely spread as this one.

Before attacking the sham competition as applied to large works, let us extirpate the occasional lapses into this practice in the conduct of private buildings. To do this successfully, we must enforce upon the public an understanding of the fact that the functions of the architect are the application of his knowledge, taste and skill to the interpretation of the wants of his clients into the language of actual, erected buildings, and that his plans are but means employed for the attainment of this end; that in no case is the architect a vendor of plans. When this is once generally understood we will have no more of the now prevalent idea, that as the merchant in competing with his rivals exhibits samples of his wares, so the architect should push his fortune by exhibition to possible customers of samples of the plans he may have on sale. If it is said that the tyro in architecture has no stock-in-trade but the tentative plans and sketches he may make and exhibit to possible clients, I reply that if he has properly qualified himself for the work he proposes to do by long, faithful and diligent service in the

employ of eminent practitioners, he will have identified himself with the design and execution of so much creditably executed work that he can safely point to this and to his apprenticeship as qualification for the confidence which he asks of the friends whom he ought by this time to have made. Let him remember that his standing will be higher, and therefore his emoluments will be higher from the beginning of his career if he claims recognition as the possessor of knowledge and skill, and of judgment to apply them, than if he degrades himself into a peddler of plans, craving, hat in hand, an inspection of his stock of sample sketches. Of course, the direct application of all this is chiefly to small and unimportant work; but we should carefully guard against a lowering of the *morale* of the recruits in our ranks, as this is a matter of vital importance to the maintenance and elevation of our own *esprit de corps*, and to our relation to and standing in the outside world.

We should take pains to demonstrate that if the experience and skill of several architects in dealing with a given problem are equal, the greater the degree of mental intimacy and familiarity existing between clients and architect, the better will be the resulting work. In the case of competitions, the immediate personal contact and intimacy, the free interchange of ideas between projectors or owners of the proposed buildings and the competing architects becomes, to a great extent, an impossibility. The more fair, the more honest the competition, the more complete the isolation of client and architect. Hence the resulting designs can only attain academic perfection, and will be deficient in the sympathetic, life-giving qualities, which implies a loss to the owners of the building, to the public at large, and to our profession, and architects as a body expend so immense an aggregate of labor and money upon such competitions, which yield, even when instituted under the most favorable auspices, comparatively small and unsatisfactory results.

A recent instance, still fresh in the minds of all of us, illustrates the futility and wastefulness of what is recognized as one of the best and most ably conducted of this class of compositions. The authors of the accepted design in this competition state "that they began a study of the problem by laying out all the plans they could devise for such a building and such a lot. Their value as to exterior light was then compared; and the one herewith submitted giving the best results was therefore chosen." That is, they did precisely what they would have done had this work come to them in their ordinary practice, but they lost the advantage which the influence of the personal magnetism of the chief promoters and managers of the project would have given, and thus the owners of the building do not obtain as good a result as they would have secured had they at once, without the roundabout method of competitive plans, recognized the superiority of these or perhaps other architects in their continuous competition in the erection and administration of actual buildings. And how is it with the cost to the profession of this model competition? Forty-seven architects expended an aggregate of probably $25,000 in cash or its equivalent, and an aggregate of vital energy worth many times as much if applied to the prosecution of their legitimate business, and all for the chance that one of their number be given the opportunity to earn by hard work and the further expenditure of $7,500 the sum of $20,000, and the glory of having vanquished his fellows in a fair and open combat.

And this is the best, almost the ideal competition.

Can such a method of conducting our business be conducive to the elevation of the best interests of our profession, or of the public whom it serves? I deny it, and I believe the more thoughtful among you agree with me.

But in the case of our public buildings, erected for the national government, the state governments, our counties and municipalities, the temptation to nepotism and subversion of political patronage to improper ends is so great, and architects as a body are probably so much more in sympathy with the actual owners of such buildings, namely, the American people, than are the office-holders and dispensers of patronage, with their short and insecure terms of office, that a free and general competition, honestly and intelligently conducted, seems the best means of securing results satisfactory and creditable to the people and to our profession. That these competitions be rescued from the slough of corruption into which they have fallen, that they be made so that the best architects in the land will consent to participate in them, that the buildings produced by them become the pride of our nation and of our profession, is a task to be performed by this and kindred organizations. It is a task of stupendous difficulty. Its successful performance will require united, steady and persistent effort on the part of each and every individual in our associations and by the associations as a whole. It may be many years before we succeed, but succeed we must. That sympathy and understanding between the average American architect and the average American client, which have created American architecture, as applied to private buildings, can and must be extended to produce a civic architecture as stupendous and as perfect in its expression of the genius of the American people as was the art of the Egyptians, of the Greeks and of the Romans, and as fervid and emotional as the Gothic of the noblest types. To accomplish this we must be united and true to each other, so that we may influence for good not only the national and other legislative bodies, but the great American people, which creates and moves them all with a resistless power which no amount of corruption can long withstand. This is our task, partly formulated at our last convention. Let our work at this convention be in furtherance of this great and noble end.

Gentlemen, I thank you for your attention, and hope your deliberations of the next three days may be characterized by that harmony, wholesomeness and breadth of purpose which were so conspicuous in our preceding conventions.

The President: The third annual convention of the Western Association of Architects is now open for business. Mr. Secretary will please call the roll of members.

Secretary John W. Root then called the roll, and the following members responded: D. Adler, R. C. Berlin, W. W. Boyington, L. D. Cleaveland, A. Druiding, Henry Lord Gay, William Holabird, W. L. B. Jenney, H. S. Jaffrey, Paul C. Lautrop, Normand S. Patton, C. M. Palmer, S. M. Randolph, John W. Root, Louis H. Sullivan, L. J. Schaub, J. E. Silsbee, S. V. Shipman, S. A. Treat, F. M. Whitehouse, all of Chicago; J. F. Alexander, Lafayette, Ind.; Clarence O. Arey, Cleveland, O.; Louise Bethune, Buffalo, N. Y.; G. W. Bullard, Springfield, Ill.; L. S. Buffington, C. E. Baldwin, Minneapolis; M. H. Baldwin, Memphis; John Beattie, St. Louis; C. A. Curtin, Louisville; A. C. Class, Milwaukee; F. G. Corser, Minneapolis; Charles Crapsey, Cincinnati; N. J. Clayton, Galveston, Tex.; William Davelaar, Milwaukee; G. W. Drach, Cincinnati; E. O. Fallis, Toledo, O.; E. F. Fassett, Kansas City; P. P. Furber, St. Louis; W. R. Forbush, Cincinnati; W. G. Gaines, St. Louis; E. S. Hammatt, Davenport, Ia.; F. D. Hyde, Dubuque; I. Hodgson, Minneapolis; H. Hohehnschild, Rolla, Mo.; S. J. Hall, Columbus, Ohio; W. F. Hackney, Des Moines; C. C. Hellmers, jr., St. Louis; C. E. Illsley, St. Louis; L. Kledus, St. Louis; E. H. Ketcham, Indianpolis; J. J. Kane, Ft. Worth, Tex.; G. W. Kramer, Akron; J. J. Kouhn, Lincoln, Neb.; G. M. D. Knox, Kansas City; C. H. Lee, Des Moines, Ia.; H. A. Linthwaite, Columbus, O.; R. C. McLean, Chicago; G. H. Miller, Bloomington, Ill.; D. W, Millard, St. Paul; Louis Muller, jr., Chicago; S. J. Osgood, Grand Rapids, Mich.; G. W. Payne, Carthage, Mo.; W. L. Plack, Des Moines, Ia.; N. C. Ricker, Champaign, Ill.; G. W. Rapp, Cincinnati; E. G. Rueckert, Cincinnati; Alfred F. Rosenheim, St. Louis; Sidney Smith, Omaha; T. Sully, New Orleans; E. H. Taylor, Cedar Rapids, Ia.; C. J. Williams, Dayton, O.; F. A. Weary, Akron, O.; O. C. Wehle, Louisville, Ky.; J. W. Yost, Columbus.

The President: The reading of the minutes of the last convention is now in order, but as these minutes are very long, and as they have already been published in THE INLAND ARCHITECT and are probably familiar to all of you, I shall direct the secretary to dispense with the reading of them if there is no objection from any of the members.

No objection being raised, the reading of the minutes was passed.

The President: The report of the committee is next in order. The secretary informs me that copies of the constitution and by-laws of the association, and also lists of the committees are in the room and can be procured by members present.

The report of the Executive Committee is the first in order. Mr. Jenney, has the committee any report?

W. L. B. Jenney: The report is in the hands of our secretary, Mr. Root.

The secretary, after reading a partial list of the names of those reported for membership to the society, was interrupted by the president, who said: Shall the convention take action upon the names of candidates presented by the Executive Committee now, or shall it proceed with its business and take up these names hereafter? What is your pleasure, gentlemen?

Charles Crapsey: Mr. President, I move that the matter be deferred until the day after tomorrow.

C. C. Helmers, jr.: There are quite a number of gentlemen present at this convention, and many of them may be desirous of participating in our deliberations, and for that reason I should object to putting off passing on their names, as that would exclude them from taking part in our deliberations.

The President: The motion before the house is to postpone action upon the names of the candidates presented by the Executive Committee until the day after tomorrow.

Sidney Smith: I would move as an amendment, that the names of the gentlemen be submitted to the convention now, and that it would not debar others from being presented afterwards.

Motion seconded and carried.

The President: We will take up these names seriatim. The secretary will read the names of the candidates, and, after the reading of the name, if there is no question raised, it will be assumed that there is no objection to the admission of the gentlemen. If there be any objections or possibilities of any objection, the objectors will please make a motion for a postponement of consideration in that particular case, and such motion will be understood.

The secretary then read the following list of names: S. B. Abbott, Springfield, Mo., recommended by H. Hohehnschild, Rolla, Mo.; F. Herr, Dubuque, recommended by Mr. Adler; L. D. Grosvenor, Jackson, Mich., recommended by Mr. Adler; S. E. Des Jardines, Cincinnati, recommended by G. W. Rapp; A. W. Hayward, Cincinnati, (now Wichita, Kan.), recommended by Mr. Rapp; C. B. Cook, Chillicothe, Mo., recommended by Mr. Rapp; John F. Cook, Chillicothe, Mo., recommended by Mr. Rapp; William M. Aiken, Cincinnati, recommended by Mr. Rapp; M. Maurey, Louisville, recommended by J. W. Root; Mr. E. P. Bosford, St. Paul, recommended by Mr. Corser; W. J. Dodd, Louisville, recommended by C. A. Curtin; C. C. Burke, Memphis, recommended by C. A. Curtin.

The President: There being no objection to the admission of these gentlemen, they are hereby declared members of the Western Association. The report of the Committee on Raising the Standard of Professional Requirements for Membership, will now be heard. Mr. Boyington is chairman of that committee.

Mr. Boyington: Your committee have no meeting, and I am therefore unable to make any report.

The President: The matter of uniform contracts and specifications was referred to the Executive Boards of the several state associations. Are any of these ready to report upon this matter.

No report was offered.

The President: The next in the list of committees is that of the Committee to take Charge of the Bill Governing the Office of Supervising Architect of the United States, and, as chairman of that committee, I beg to make the following report (Mr. Sidney Smith was called to the chair):

Your committee appointed to take charge of the bill governing the office of supervising architect of the United States, after careful consideration of the bill as left in our hands at the last convention, making such amendments and additions as were necessary to secure harmony of action with the corresponding committee appointed by the American Institute of Architects, had the same printed, and copies of it distributed. The bill, as prepared by the joint committee, was presented to congress by the Hon.

A. S. Hewitt. It had been before the house a number of weeks, and Mr. Burnham and myself, representing this association, and Mr. Bloor, representing the American Institute, paid a visit to Washington and endeavored to see what were the prospects for the passage of the bill, and to do what was in our power to expedite that passage. We had a hearing before the members of the Committee on Public Buildings and Grounds, and Mr. Burnham, personally, also had a number of interviews with gentlemen in the treasury department who would have more or less influence upon the fate of the bill.

The attitude of the members of the Committee on Public Buildings and Grounds seemed to be one of indifference. Mr. Stockslager, who was chairman of that committee in the forty-eighth congress, is not now a member of this congress, and there seemed to be no one in the committee who took any great interest in the passage of our bill. There seemed to be a fear that the free and general competition, which was made one of the features of the proceedings, would work detrimentally, perhaps, to the interests of local architects in the vicinities where public buildings might be erected.

Subsequently, Mr. Bloor received a letter upon the probable fate of the bill from Mr. Hewitt, in which Mr. Hewitt stated that there was no hope of the passage of the bill unless there was a strong pressure brought to bear upon members of congress by the press, and by the constituents of those members of congress.

Your committee has done nothing further toward securing the passage of the bill except in the way of seeking to interest prominent citizens in its fate, and can only recommend to this association that a similar committee be appointed by this convention to act in its behalf during the next year, to again coöperate with the corresponding committee of the American Institute of Architects and to do all in its power to interest prominent citizens and members in the work of the association. The committee also recommends that the same work and the same endeavor to influence citizens and press that is made the duty of the committee, be taken up by each individual member of the association, so that we may have in every state represented by this association efforts made to secure an expression of public sentiment in favor of the bill as we have proposed it. The committee realize that the passage of this bill is a matter of extreme difficulty, and they doubt whether it is possible to secure its passage by the forty-ninth congress, and that it can never be passed if we are not unremitting in our efforts to work upon public sentiment.

I. Hodgson: I move that that committee be retained.

The President: We do not ask for a continuation of the personnel of the committee, but that a similar committee be appointed by this convention. What is your pleasure?

Motion carried.

The President: The next in order is the report of the Committee on Procuring Architectural Drawings and Photographs for Exhibition at the Next Convention of the Western Association. Mr. Alexander is chairman of this committee.

Report passed.

The President: We will now hear from the Committee on the Collection of Statistics on Competitions.

Sidney Smith: Mr. Illsley is not present. There has been some communication between the members and Mr. Illsley, but Mr. Illsley, as chairman of the committee, would necessarily have the report.

The President: We will postpone hearing from that committee until Mr. Illsley arrives. The Committee to represent the Western Association at the next Annual Convention of the American Institute has not been able to serve, inasmuch as that convention has not yet taken place. If there is no objection, this committee of the last convention can be kept in force to do the work laid out for it at that time.

Mr. Jenney: I move that the power remain with the president to employ substitutes in the places of those who may tender their resignations. Carried.

The President: The next in order is the Committee on Statutory Revision, and as chairman of the Committee on Statutory Revision, I will say:

That it has been impracticable to have a meeting of that committee before this convention, but as there was practically no work to be done by the committee, as such, in most of the states, and as in the states there have been sessions of the legislature since our last meeting of so exciting a nature that the bill, as especially placed in charge of that committee, for the regulation of the practice of architecture in the different states, has not made any progress. The bill has been printed. It should be pushed to a passage in the sessions of the legislature that are to take place this winter. There are seven or eight states represented by this association, which will have sessions of the legislature. I would recommend, and I think I do this with the concurrence of the members of the committee who are present, that so far as the pushing of our bill in the individual state legislatures is concerned, that this be made the task more particularly of special committees appointed by the associations in the states which will have sessions of the legislature, and that where such meetings, where there is no such state organization, that there the architects represented in our association select one or more of their number to make this effort. Your committee makes this recommendation for this reason, that it is impossible for the president of this association, or for its members assembled here in convention, to make selections of the members of the profession best qualified to do this work before the various state legislatures. It requires local knowledge and a knowledge of the men to be influenced, and of the capacity of the individual architects to accomplish this work, to make proper selections.

Your committee also recommends that while the last convention has endeavored to so form the proposed enactment as to comply as nearly as possible with constitutional provisions, so far as the committee itself could see them, still many of those vary in the different states, and that, therefore, these sub-committees in the different states, the appointment of which we recommend, be empowered to make such changes and such deviations from the bill as we have prepared it, as will make it best adapted to the peculiar legal provisions existing in the different states.

Your committee believes that harmony of legislation can be secured to better advantage if slight modifications are made to satisfy the peculiar requirements of each state.

With reference to the bill regulating the office of the supervising architect, which is also to a certain extent in the hands of this committee, nothing has been done, as all has been left in the hands of a sub-committee.

Your committee has no further immediate recommendations to make.

E. H. Ketcham: I move that the report of the Committee on Statutory Revision be accepted.

S. M. Randolph: I move as an amendment to that motion that the committee be continued.

Mr. Ketcham accepted the amendment of Mr. Randolph

The President: I would ask Mr. Randolph to withdraw that motion, inasmuch as it is to a certain extent at variance with the recommendations of the committee itself. The committee recommends, to all intents and purposes, a reconstruction of itself, that is, so that its members may include those best capable of pushing its work. I would suggest that the motion proposed be formulated in this way: that the committee be continued, and that it be constituted of members selected by the individual state organizations; or, where there are no state organizations, by members of the association who may reside in each particular state. That would be in harmony with the recommendations of the committee.

Mr. Randolph said: My reason for wishing to continue the committee was this, that they have drawn the bill, and when the state associations are presenting it before the different legislatures they will have the authors or fathers of the original bill to explain to them, perhaps, the necessity for amendments they may have to offer to them, which will require thought. Our central committee has given the matter a great deal of study, and for that reason I thought that at least a part of that committee should be continued so that the auxiliary committees could at any time consult with them. I accept the amendment as suggested by Mr. Adler.

Motion carried.

The President: The next in order is the report of the Committee on the Formation of State Associations. Mr. Alexander is chairman of that committee.

The Secretary: There is one matter I would like to call attention to, and that is a slight change in the by-laws which has been overlooked apparently. In article 6 it is printed, "it shall be the duty of the president to preside at all meetings of the association, and in his absence the vice-president of the association for the state." It should be, instead of vice-president "president." That was the subject of a motion at the last convention, but it in some manner escaped being printed in the by-laws.

The President: The chairman of the Committee on the Formation of State Associations not being present to make a report, new business is next in order.

Sidney Smith: Will the chairman of that committee have the opportunity to report later?

The President: Yes. sir.

Mr. Smith was again called upon to occupy the chair, and the president said as follows:

The President: Gentlemen, as new business is now in order, I would like to suggest that action be taken with reference to some vital matters that have generally been left to the end of the convention and have then been hurried through. I refer first to the fixing of a place for the next annual convention of this association, and next, to the nomination of officers. I believe that with reference to both of these, the practice of the last convention was not the best; the entire matter was left to a committee, and it is not at all certain that the action of a single committee acting on behalf of the association, and thereby practically forcing the association to endorse its action, really expresses the will of the majority of the association. Now, with a view also to avoiding objections and difficulties incident to indiscriminately nominating a place for the next convention, and for officers in open convention, which also has its drawbacks, there should be appointed by this convention two committees, each composed of seven members, whose duty it shall be each to place in nomination, first the place for holding the next convention, and secondly, a list of the names of the members whom they propose as candidates for the various offices to be disposed of by this body. I will not make this a motion but as a suggestion, and hope that one of the members will put it in the form of a motion; that these committees be elected either by this body as a whole, or appointed by the Executive Committee or by the president—that this selection or appointment take place today, and that the committees be instructed to report at their convenience before the close of this convention. We will gain by this a great advance over the work of previous conventions if we place upon these nominating committees the best men in the association; that is, having but a single committee, modesty will compel these people from nominating themselves. By appointing two such committees we will have strong men in each, men who know best what nominations to make, and we will have a chance of having some of these very members of these committees who are desirable as officers of the convention nominated, if not by their own, then by the other committee.

Mr. Hodgson: I move that the chairman of the present association appoint two such committees.

Mr. Crapsey: I understand that there are seven state organizations. Is that one for each member?

The President: Not necessarily. My object in selecting seven members for each committee was that by selecting fourteen men we would be apt to get a very fair representation of the best material of the convention and which would be independent of state organizations.

Mr. Crapsey: How many state organizations are there?

R. C. McLean: There are nine.

Mr. Crapsey: Then I think the committee is too large, unless you appoint one from each state organization. Anyway, I move that each question be voted on separately.

Geo. W. Rapp: Does this mean two committees with similar objects?

The President: Yes, sir. And for the information of Mr. Rapp, I will say this, and it will doubtless interest members in general, that my object in joining the name of the place of the next convention with the nomination of officers, each in the same committee, was this: that the board of officers should be chosen to a certain extent with reference to the place where the next convention is to be held. If the convention is to be held, I will say in Minneapolis or St. Paul, it is quite likely that it would be desirable to have a somewhat different disposition of the members of the Executive Committee, etc., than if the convention were to be held, I will say in Cincinnati, or Buffalo or Chicago; and I thought it would be well if each committee were to make these nominations of officers and its nominations of the place for holding the next convention jointly, so that the two would be in harmony. It has also another purpose, in that it will give greater freedom of choice to the members of the convention, as it does not necessarily follow that they must indorse *in toto* the report of each committee; the association may make its selections from these nominations afterward; it may select a place to hold the convention of one committee, and a portion of the officers nominated by that committee, and a portion of the officers nominated by the other committee.

The amendment of Mr. Crapsey was withdrawn, and the motion of Mr. Hodgson, that the chair appoint the committees, was carried.

The President: I will make an effort to select the members of those committees, and announce them either at the latter part of the afternoon session or early tomorrow morning (Thursday.)

The President: The secretary has been in receipt of communications from parties who manufacture special articles of interest, or that they consider of interest to the members of our profession, such as patent processes, etc. He has received notices calling the attention of this convention to

their articles. Is it your pleasure that such letters be read and acted upon, or that they be laid aside by the secretary?

Mr. Rapp: I move that these letters be posted in the adjoining room for the inspection of the members.

No objection being raised, this was ordered done.

F. G. Corser: To go back in this matter of nominations, I would suggest that each member of these nominating committees be required to get up a ticket in print for distribution among the members, so that we may compare, split the tickets, if need be, etc., as we wish.

The President: This can be done if the committees can come to an agreement early enough.

A motion by Mr. Randolph to adjourn until 2 P.M., and amended by Mr. Treat to 3 o'clock, was carried, the time to be 2:30.

## FIRST DAY—AFTERNOON SESSION.

WEDNESDAY, November 17, 1886.

President Adler called the convention to order at 3:15 and said:

I will now announce the names of the members of the two committees to make nominations of officers for the ensuing year, and to put in nominations places for the holding of the next convention. The first committee is: J. F. Alexander, Lafayette, Ind.; L. S. Buffington, Minneapolis, Minn.; Wm. Holabird, Chicago, Ills.; Mr. L. D. Cleaveland, Chicago, Ills.; Mr. C. C. Helmers, Jr., St. Louis, Mo.; G. W. Rapp, Cincinnati, O.; and Mrs. Louise Bethune, of Buffalo, N. Y. The second committee is: D. W. Millard, St. Paul, Minn.; S. M. Randolph, Chicago, Ills.; E. H. Taylor, Des Moines, Ia.; Sidney Smith, Omaha, Neb.; Sam'l A. Treat, Chicago, Ills.; C. A. Curtin, Louisville, Ky.; and P. P. Furber, St. Louis, Mo.

The president announced that the treasurer would now read his report, and if the members would kindly give their attention they would doubtless find it a very satisfactory document.

Treasurer S. A. Treat: The treasurer's report is as follows:

| | |
|---|---|
| Received from Mr. Adler, the former treasurer | $ 27 68 |
| Dues to date | 828 00 |
| Interest on United States bonds and profits on the sale of the same | 26 25 |
| Total receipts | $881 93 |
| Disbursements | $190 91 |
| Balance on hand up to this morning | $691 02 |

Since that time I have collected over $100, and as soon as possible will make my report.

The President: I have here a motion,

*Resolved*, That the president appoint a committee of three members from each state association to collect information in regard to legal decisions relating to building interests, and that they report at the next annual convention.

The motion is made by Mr. Hellmers.

The motion was seconded.

Mr. Hellmers: I would say in regard to this, that there are cases in our practice almost daily where an architect is obliged to select a course to pursue in a matter that is afterwards apt to be drawn into court, and a simple annual of such information to refer to would assist us very materially in coming to these decisions; and I think that if a committee could be appointed from each state to gather information regarding decisions in that state, and it could then be put in the form of a pamphlet, that it would be invaluable to every member of the profession.

The President: I will say in explanation, that having been for two years a member of the committee that has among its duties the collection of this information, that during those two years there was but one member of the committee who favored any effort at all to collect this information, and of course the reach of his investigations was comparatively small as compared with the efforts of a committee from each state. This committee, if appointed, would take, within the extent of the work outlined here, the place of the present committee on statutory revision.

Mr. Ketcham: In that way it seems to me we will not be able to reach the end sought for. Were the matter placed in the hands of attorneys by the respective state associations, and they have these attorneys collect this information, which they could do much better than the architects, we would get a far more reaching search than in any other way. It would seem preferable to delegate the search to each state association.

Mr. Hellmers: While it might be a very good thing to employ attorneys, yet I cannot agree with Mr. Ketcham in referring it to the state associations. I think, my experience has always been, that the matter so referred, has died; in other words, the state associations have accepted the draft and done nothing with it. I think that if the proper men are selected to cull out this information, we can get at it far better; and I think the only way to do that is to have committees appointed to report at the next annual convention, and if any of the state associations seem sufficiently interested, they can employ a lawyer and defray the expenses of so doing.

The President: Anything further to be said on Mr. Hellmers' motion? No response being received, the president again read the motion, which was put and carried.

The President: I would request that to enable me to act intelligently with reference to the appointment of members of this committee, that the representatives of each state agree among themselves as to who would be the best men to select for this duty, and give me the names this afternoon or tomorrow morning, so that I may be able to appoint this committee with some reasonable expectation that the gentlemen appointed will do the work. If I should select them haphazard, as I should have to do, on account of my limited acquaintance with the association, I am afraid I might make many blunders, and would not make the proper selections. I would also suggest, in the matter of the committees on nominations that have been appointed, that the individual members of this convention assist these committees by writing on slips of paper as he suggests, as regards nominations or as regards the place for the next convention that they may entertain, and that this memoranda be handed to the respective committees. It would be well that all of you that have such suggestions to write them out in duplicate and hand one to the member of each of the committees. In this way the committee will get to know the wishes of the association much better than they could otherwise do, and they would be put in possession of the information they desired much sooner than they could be by personal conversation or inquiry. Is there any other new business to be brought before the convention? The Board of Directors has reported some new names of applicants for membership, upon which their report is favorable. Are you ready to receive them? if so, I will request the secretary to read the names.

The secretary then read the following list of names:

J. F. Wing, Fort Wayne, Ind., recommended by Mr. Alexander; M. S. Mahurin, Fort Wayne, recommended by Mr. Alexander; Eugene S. Calkin, Los Angeles, Cal., recommended by Mr. Gay; G. W. Thompson, Nashville, recommended by Mr. Rapp; James King, Huntington, W. Va., on his own application.

Mr. Sidney Smith: I move that the name of Mr. Smith be referred for further consideration.

The President: If there is no objection, it will be so referred.

The name of Mr. King was ordered referred for further consideration.

The Secretary: The next name is M. F. Isbell, of Goshen, Ind., recommended by Mr. Holabird; J. F. Frees, Columbus, Ohio, recommended by J. W. Yost; Bernard Vonnegut, Indianapolis, Ind., recommended by Mr. P. P. Furber and J. F. Alexander.

Mr. Ketcham: I would like to add to that list the name of Mr. Merritt Reid, of Evansville, Ind.

The President: If there is no objection to the admission of the report of the Board of Directors, that these gentlemen be admitted to membership, they will be declared members of this association. They were so declared.

The President: Mr. Sullivan will now read before you a paper which he has prepared for us.*

Mr. Sullivan's paper was prefaced by the following remarks:

Mr. President and gentlemen of the convention: I would like to say, in a prefatory way, before reading my essay, that I have prepared, on "Inspiration," that to write an essay on inspiration is something like writing an essay on the eyesight: it is something that we all know about but it is very difficult to define. Therefore I will indulge in no definitions, but instead of dealing in plain language, I will treat my subject in the language of metaphor. My essay is divided into three parts, being a direct appeal to nature, whence all our emotions and inspirations come.

The President: The Committee on State Organizations has presented its report.

### REPORT OF COMMITTEE ON STATE ORGANIZATION.

*To the Western Association of Architects assembled in Convention at Chicago, November 17, 1886.*

Your Committee on State Organization has the honor to report that in the prosecution of its labors, it has met with a hearty and cordial coöperation.

We have successfully organized the States of Minnesota, Iowa, Illinois, Nebraska, Kansas, Missouri, Ohio, Texas, and Indiana, all of which are working in a harmonious and satisfactory manner.

Mr. Harteau, your committee from Wisconsin, asks that one member from Milwaukee be added to his committee.

Mr. Osgood, your committee from Michigan, asks that one member from Detroit be added to his committee.

Mrs. Bethune, committee from New York, has organized the Buffalo Society of Architects, fourteen members, and they are working in a harmonious manner. She has also turned her attention to the various other cities in the state, with prospects of success.

We think it best that this committee be continued until an association in every state is organized. Respectfully submitted,

J. F. ALEXANDER, Indiana,
CHAS. K. RAMSEY, Missouri,
E. H. TAYLOR, Iowa,
I. HODGSON, Minnesota,
H. P. MCDONALD, Kentucky,
GEO. W. RAPP, Ohio,
D. M. HARTEAU, Wisconsin,
SIDNEY SMITH, Nebraska,
W. H. CUSACK, Tennessee,
T. SULLY, Louisiana,
S. J. OSGOOD, Michigan,
J. G. HASKELL, Kansas,
S. A. J. PRESTON, Texas,
MRS. LOUISE BETHUNE, New York.

*To Dankmar Adler, Esq., president of, and the members of the Western Association of Architects.*

GENTLEMEN,—Having been appointed as a committee on State Organization of Architects for the State of Wisconsin, at the second annual meeting, held at the city of St. Louis, Mo., I beg leave to report as follows: I went to the city of Milwaukee, Wis., in the month of March, 1886, and interviewed the architects resident there. I was informed that a local organization of architects had been formed there some weeks previous to my visit. I used my best endeavors to have them assist in forming a state organization and merge their local organization therewith, but without success. I therefore dropped the matter, and have done no more to that end. I would respectfully recommend that some member from the city of Milwaukee would be appointed in my stead for the following reasons: That the bulk of architects reside in the city of Milwaukee, and that I am comparatively alone in the city of Green Bay, there being but one other architect resident here. As I will be unable to attend your meeting, I would suggest the name of, and recommend, that Thomas N. Philpot, of the city of Milwaukee, be appointed in my stead, as I herewith respectfully resign my chairmanship on the Committee on State Organization for the State of Wisconsin. All of which is respectfully submitted.

Dated November 17, 1886. D. M. HARTEAU,
Chairman of Committee on State Organization, Wisconsin.

Mr. Yost: I move that the report be accepted and the committee continued, and that the president appoint members from the different states, as requested by the members of the committee.

The President: You have heard the motion, that the report of the committee be accepted, the committee continued, and that the additional members asked for be appointed.

The motion was carried.

Mr. Vonnegut: The Indianapolis Society of Architects have presented a protest against the Indiana State Association. I would move that that protest be now read.

The President: Has this protest been received as yet by this association?

* Published elsewhere in this issue.

The Secretary: As the protest was received by the Executive Committee too late (it reached here this morning) the members of the Executive Committee were approached by several persons, both belonging to the Indiana State Association and the party of the protestants, asking that this report be for the time held in abeyance, because the difficulty, whatever it was, was of such a nature that it was eminently probable it would be adjusted between the members of the Indiana Association themselves. For that reason the Executive Committee has held the report in abeyance and have taken no action whatever upon it. They have, however, referred it back to Mr. Alexander and one member of the Executive Committee, for future action.

Mr. Patton: I would like to inquire from the committee whether anything has been accomplished in the State of Wisconsin toward the formation of an association?

The President: I infer from the report that nothing has been done, and that it is in that account that the appointment of an additional member of the committee is asked. It appears that by an unfortunate selection of a member to represent this association in that committee it was impossible to secure organization—not because Mr. Harteau, who represents this association in the committee, is not well qualified, but because he is located in an out-of-the-way part of the state, and, therefore, asks that an architect from Milwaukee be added to the committee to make it effective. The chair regrets very much to be compelled to announce that Mr. D. H. Burnham, who had prepared what promised to be a most interesting paper, to be read this afternoon before this convention, has been suddenly and unexpectedly called out of the city—to Springfield, I think—and will be unable to present this paper.

Mr. Patton: In connection with the State of Wisconsin, I understand that there has been formed last year a local organization in Milwaukee. Would it not be the better course to let that association take charge of the matter of forming a state organization, or merge itself into one, as there is already a body of architects in Milwaukee who are organized as an association?

The President: The chair will adopt your suggestion to the extent that he will ascertain who is the leading member of that Milwaukee association, and will appoint him the associate of Mr. Harteau on the Committee of State Organization.

Mr. Rapp: I would like to ask if Mr. Cusack, of Nashville, who is on that committee, is still in Nashville. I was told this afternoon that he had removed to New York state. It is, therefore, a question whether it would not be better to appoint another. Mr. Thompson, of Nashville, is here and can answer.

The President: Is Mr. Thompson here?

No response being received, the chair continued: The chair can take cognizance of this, and also the Board of Directors, and if it seems advisable to make a change of membership on the committee it can be done hereafter. I would be obliged to you, if Mr. Thompson should attend a future session of this convention that you will call my attention to his presence. Gentlemen, Mr. Root has an important resolution to present to you.

Secretary Root read the following resolution:

WHEREAS, In the case of each building constructed from the designs, and under the supervision of a member of this association, the owner of the building should be supplied with full data of all official points involved in its construction.

*Resolved*, That the Executive Committee have printed and mailed to each member of the association a form, the object of which shall be to supply to members, under the seal of the association, a schedule of points in relation to which the Executive Committee deem it advisable that clients should be informed.

My object in this resolution is this: I suppose every architect has in his practice frequent cases in which a building constructed for one purpose is changed from that and devoted to another purpose. The measure of his responsibility in such case is very difficult of estimate. Serious damages may occur not through any fault of his, but by the heedless overloading, for instance, of a building constructed for light manufacturing purposes which is turned into a warehouse; and the object of this form suggested is that it shall state all the necessary points of structure in the building, its uses, its intended purposes, the weights intended to be borne by the floors, the amount of the load supposed to be delivered on the clay at the bottom of the foundation, the character of the columns involved in the structure, and all those essential points which go to determine the general drift and character of the building; and that in furnishing the owner with this, the architect shall disclaim any personal responsibility if the building is diverted from its original purpose without his consent. In other words, there shall be a blank supplied by each one of us that shall define the purposes of the building, and free us from responsibility in case the building is changed from the original purpose.

The motion, seconded by Mr. Smith, was carried.

Attention was called to copies of the competition code for distribution, and the meeting adjourned.

## SECOND DAY—MORNING SESSION.

THURSDAY, November 18, 1886.

The second day of the convention was opened by the president, who called the meeting to order at 11 A.M.

The reading of minutes and calling of the roll was dispensed with.

After discussing the existence of members who at the present time are not eligible to membership, it was moved by Mr. Shipman:

*Resolved*, That in cases where gentlemen have been recommended for membership to the Board of Directors under a misapprehension of the rules governing the eligibility of membership, that the Board of Directors be given power to rectify the errors made and to notify the gentlemen in question of their ineligibility under the rules of the association.

Mr. Curtin: Do I understand that that applies to any member who has been elected by this Association during the past two years as well as yesterday? Would it not?

The President: It could be made so. This motion, probably, was not intended to be corrected to that extent, but the association, of course, has a right to make it so.

Mr. Curtin: Then I move, as an amendment, that all membership from the beginning be taken under consideration of the Board of Directors with reference to their eligibility.

The President: Will Mr. Curtin please put that in writing? While this motion is being written out it might be well for the secretary to read the names of the gentlemen recommended for membership by the Board of Directors.

The Secretary: The first on this list is Mr. Fred. Kees, of Minneapolis, recommended by L. S. Buffington; F. J. Grodevant, Leavenworth, Kansas, recommended by Mr. Buffington; Merritt J. Reed, Evansville, Indiana, recommended by E. H. Ketcham; J. Mulvey, Aurora, Ills., recommended by Mr. D. Adler; Wm. Zimmerman, Chicago, recommended by Mr. Lautrup.

The President: If there is no objection to the admission of these gentlemen they will be declared members of the Western Association of Architects.

No objection was raised and the gentlemen were so declared.

Mr. Shipman's motion, as amended by Mr. Curtin, was then voted upon and carried.

The President: Are any of the committees who were called upon yesterday to report, now ready?

Mr. Boyington: I have had a conference with one member of the committee, on the subject of elevating the standard of our profession by the introduction of members to our society. We have concluded that section 4 of our constitution covers all the ground that we could recommend, and we have no suggestions to offer.

[The section referred to reads as follows:

SEC. 4. Any architect practicing his profession in the United States may become a fellow of this association. All members in good standing in any state association organized under the laws of that state, also all members of the American Institute of Architects who shall become subject to the Constitution of the Western Association, are by virtue of such membership fellows of this association.—ED.]

The President: You have heard the report of your committee; what is your pleasure, gentlemen?

Mr. Yost moved that the report of the committee be received, which was done.

Mr. Sidney Smith: I have a resolution to offer for the consideration of the convention, and I think it touches considerably upon what has just taken place. I will first read the resolution:

*Resolved*, That all applicants for membership, recommended by the Board of Directors to be hereafter voted upon by ballot, that five ballots cast against any such applicant will be sufficient for his rejection.

Mr. President, I offer this resolution for two reasons: It has come to the knowledge of the Board of Directors that application for membership have been passed here, and although there were a number of gentlemen present in the room who would otherwise have objected to them, they did not feel justified in doing so in open convention. This I think would be remedied by a vote by ballot, the same as is customary with many other associations. It does away with the disagreeable necessity of a man's making enemies; while he may personally be good friends with the applicant, he would not care to go up in open convention among so many of his fellows and oppose him for membership in this association; and it is for this reason that I offer the resolution.

The President: Is the resolution seconded?

Mr. Boyington: I second it.

The President: You have heard the motion of Mr. Smith; have you any remarks to make in reference to it?

Mr. Curtin: Would not that be considered as an amendment to the by-laws?

Mr. Sidney Smith: I think that can simply be an addition to the clause as it already exists.

Mr. Yost: I think this association ought to hesitate before accepting a resolution of that kind; I think it ought to be thought over pretty well before we do it. I have heard it talked for some time and I have myself thought of it; but there ought to be some recourse, there ought to be some way, if a man happens to have enemies among the members of the association, or those who might prefer that he should not be a member, it seems to me there should be some way whereby he could get into this association. It seems to me the objections could be made privately to the board when names are presented for membership, if they were read before the association and time was given for members to make objections to the Board of Directors—in a private way if they chose—who would not carry it any further, but would let the member state his objection, and consider it, it seems to me it would be a better and a fairer way than to adopt the resolution whereby the association should vote by ballot on the reception of these gentlemen. The member who objected would not have to state at all what his objection was. Now, I know, I think, a good many gentlemen who are members of the profession in different localities, who by their course of procedure—professional and otherwise—have personal enemies. I have known of their being objected to in various ways, and yet perhaps they are fairly entitled to become members of an association like this one. It seems to me the better way would be to have the resolution made so that members objecting or any member objecting or wishing to offer any objections, be allowed time; in other words, that the election of members be not rushed through in this manner, but that their names be read before the association and a certain amount of time be allowed for objections to be made, in any way they please, to the Board of Directors, and let them judge of the sufficiency of the objection; and also refer the objection, if they think proper, to the person recommending the individual to become a member. I would like to make an amendment to the resolution to that effect.

Mr. Corser: I think it would be very difficult for a man in good standing, professionally and otherwise, to find five adverse votes. I have heard that one name went through here yesterday without any objection whatever being filed with this committee, and it is now discovered that sixteen ballots of men here present would have been cast against that candidate if he had been put through by ballot.

Mr. Osgood: Would it not be as well, when a gentleman applies for membership, to leave it in the hands of the board, and let the board form themselves into an examining committee and give the member a rigid examination?

The President: The difficulty in such cases is this: The board meets on the day of the convention—perhaps, under favorable circumstances, the day preceding the convention—most of the candidates are presented at that time; the board at that time has a large amount of work on its hands, and is, of course, also desirous of participating in the proceedings of the convention, and it could hardly take the time necessary for that rigid examination.

Mr. Furber: In view of the questions that have been brought up, would it not be well that some resolution be adopted providing that all names of candidates should be presented at least thirty days before the convention sits, and a list of these names be sent to each member of the convention, and that they have time to look them over and find out, if possible, if they are men we want in the association?

The President: I doubt if that would be practicable; nevertheless, if it is offered as an amendment to the pending motion, it will be considered. Please put it in writing.

Mr. Yost's amendment, as read, was as follows:

*Resolved*, That objections to candidates be referred to the Board of Directors and time allowed to examine into the objections, the names of applicants to be read in open session at least one day before action of the Executive Committee.

The President: Are there any remarks upon this amendment?

Mr. Sidney Smith: Mr. President, in reference to that amendment, you nearly covered the ground a little while ago. When an application for membership was made, my experience of last year was that about ten minutes were given to its consideration, and possibly the applicant was unknown to any of the directors. The time that will be necessarily lost in finding out from the members present whether such a man would be acceptable, would cause an unlimited amount of work and unnecessary feeling. That is the reason I introduced the resolution, in order to avoid this. It has been justly said that a man with five black balls would have five enemies anyway; and the same would occur by personal explanation. Mr. Yost's amendment simply says that the opponent's name should not be mentioned, nor his charges, nor the objection he has to make. It seems to me that a vote by ballot would certainly cover it very much easier than by the other method.

Mr. Yost: I would like to say further that one of the points I wanted to make by the amendment was that the objections would have to be heard; that the person applying for membership into this association, if there were objections to him they would have to be heard by someone; while voting by ballot he would simply pass in and nobody would know what the objections were, whether by misapprehension or what, and I thought by referring it to the Board of Directors that they could hear what the objections were. One might be mistaken, might vote against the applicant because he thought he knew something about him, but after examination would not do so. There is another objection which I think would be a good one against voting by ballot, and that is that it would take up about one half of the time to vote upon members separately; if they come in as rapidly as I have known, it would take a considerable time to elect each member. We ought to stop this hasty election of members; their character and standing ought to be more thoroughly inquired into. I believe I would favor the amendment that Mr. Furber speaks of, requiring that applications be sent in to the Board of Directors, and that a considerable length of time be allowed for inquiry, a year if you please, so that they could be fairly inquired into, and members of the association become acquainted with the names of the applicants. I do not think we ought to be so hasty in the matter of electing members. While I am certainly in favor of electing anybody who is by any fair judgment entitled to membership in this association, at the same time I think we ought to have the applicants inquired into. This idea of having a name presented and vote taken by the executive committee within ten minutes, I do not think ought to be continued; it ought to be thirty, sixty or ninety days, and the members of the association ought to know who the applicants are before action by the executive committee. I do not like the idea of simply taking a ballot without his recommender having any chance to explain away or dispense with any objection that might be made. It seems to me it is trying a man behind his back, and may do him an injustice.

The President: Do you wish the amendment of Mr. Furber incorporated in this?

Mr. Yost: Yes, sir.

The President: The amendment as amended is to this effect:

*Resolved*, That names of candidates be presented to the Board of Directors thirty days before the session of the convention, and that a list of the names presented be sent by the board to each member for investigation.

The President: The amendment of Mr. Yost is that objections to a candidate be referred to the Board of Directors and time allowed to examine into the objections, the names of applicants to be read in open session at least one day before the action of the Board of Directors.

The amendment of Mr. Yost was lost.

The President: We will now proceed to the amendment of Mr. Furber, which is to the effect that names of candidates be presented to the Board of Directors thirty days before the session of the convention; that a list of these names be sent to each member for investigation; to be balloted on in open convention, five black balls to constitute a rejection.

C. A. Curtain: I was approached by our chairman on state organization about two weeks ago to form a state association in Kentucky. I called his attention to several parties who would hardly fit in this association, but they were allowed in that to become members of the Western Association. Who is to ballot on those?

The President: We would have to leave that to the good sense and judgment of the state association.

Mr. Fassett: Our authorized publication, THE INLAND ARCHITECT, about a month before this association meets also sends out by authority of the Board of Directors, invitations to all architects to join this association. Now, if we lay that over thirty days, and they are invited to come here at a certain day; they send their applications here indorsed by some practicing architect who is a member of the association, and if this resolution is passed they do not get a hearing for the next year. I think Mr. Smith's resolution covers the whole thing as near as can be without too much wording.

The Secretary: There is nothing official whatever about any of these invitations that have been sent out. The committee considered it best not to send them out too far in advance of the convention, lest members or persons should forget before the convention. I do not consider that THE INLAND ARCHITECT has acted upon any responsibility except as being the medium of sending out these invitations.

Mr. Yost: I understand that Mr. Smith's original resolution is in regard to that clause in the constitution that has just been read. Will it then be required that the members of the different state associations will have to be admitted by ballot if they are members of the association or not?

The President: I should rule that unless there was an amendment to our constitution this resolution requiring a ballot upon the admission of members would apply only to those who are not members of state associations and not members of the American Institute of Architects. We cannot pass a resolution to effect those who by virtue of our own constitution are already eligible to membership. Does any one else wish to speak upon the amendment of Mr. Thurber? Those who are in favor of it will please signify it by rising.

The motion is lost, as it requires a two-thirds vote to amend the by-laws.

The President: The consideration of the motion of Mr. Smith now comes up. It is that all applicants for membership recommended by the Board of Directors be hereafter voted upon by ballot, and that five ballots cast against any such applicant shall be sufficient for his rejection.

Mr. Curtin: I move to amend that by stating that all members of state associations be admitted by ballot to this association.

The President: That can be brought up at any time hereafter. Those in favor of the motion of Mr. Sidney Smith will please rise.

The motion was carried.

The President: I have here a motion by Mr. Alexander, who moves that the secretary be authorized to issue certificates of membership to all members in good standing, under the seal of the association.

The motion was seconded.

Mr. Shipman: I would suggest to the mover of that resolution that he insert a provision authorizing the secretary to get up an appropriately engraved membership certificate.

The President: Mr. Alexander accepts the amendment.

The President: The motion of Mr. Alexander as amended by Mr. Shipman is that the secretary be authorized to issue certificates of membership to all members in good standing, under the seal of the association, and that he insert a provision authorizing the secretary to get up an appropriately engraved membership certificate.

A Member: I move that the certificates be limited to one year and that a new one be issued every year, so that the difficulty you suggested before can be avoided.

A Member: I am opposed to this certificate business. I have in mind a member, who is a member of this association. He is a practitioner but has since quit the business and gone into something else. I do not think we need any certificate at all; we have all got along so far very well without them.

Mr. Shipman moved that further consideration of the subject be postponed until the next annual convention.

The motion was seconded.

The President: Those who are in favor of laying the motion of Mr. Alexander, as amended, on the table for one year will please signify it by saying "aye."

Carried.

The President: Is there any other business to be brought before the convention? If not, we will proceed with the reading of the papers which have been kindly prepared for us. The secretary read some telegrams received from George C. Mason, secretary of the American Institute, and also Mr. Bloor, of the board of directors, conveying the institute's congratulations.

A Member: I move that the secretary be authorized to appropriately respond to these dispatches.

The President: If there is no objection it will be considered the sense of the association that the secretary is authorized to appropriately respond to the last dispatch read. You will now have the pleasure of listening to a paper prepared for this convention by Dr. De Wolf, the commissioner of health of this city, whose services in the cause of reform in sanitary construction of buildings and to sanitary science at large have been so great that they cannot be overestimated by any of us. Gentlemen, I have the honor to present to you Dr. De Wolf.* (Applause.)

The President: I believe I echo the unanimous voice of the association by extending its thanks to Dr. De Wolf for the very able essay he has read to us, and in begging of him his permission that it be published in the report of our proceedings, of which it will form a most valuable—perhaps *the* most valuable—part.

The President: Gentlemen, Mr. Artingstall, who has been for so many years a designer of the public works undertaken by the city of Chicago, and whose productions have been models in their way to other cities, has consented to favor us with an essay. The president then introduced Mr. Artingstall, who read a paper, prefaced by the remark that the short paper he had prepared was but one of the minor details of the question of architecture, but it might be of some interest to the convention.†

The President: As it is still some time before the hour of adjournment, I think you will all be very much gratified to hear read the paper which has been prepared for this occasion by Mr. Boyington, the Nestor of our

*The paper is published elsewhere in this issue.

†The paper is published elsewhere in this issue.

profession in Chicago. He is the first I believe who established in his practice in this city the rule that the architect should be the architect only, and should be in the employ of the client only—a rule which has done more toward elevating the character of the profession at large in this city than anything else done by any practitioner among us.

Mr. W. W. Boyington: Mr. President and gentlemen of the convention, allow me to say before commencing with what I am about to read you and to illustrate by some diagrams that I have made, that it largely refers—almost entirely—to my own productions, my own experience, and, consequently, I trust you will not think me arrogant in referring thus to my own work; but I have been of the opinion that to an association like this something practical, something that has been done, perhaps, a little out of the ordinary course, is fully as interesting as to go upon theories that have the name only, with only partial practice; so that in alluding to this work that I have accomplished or performed, it is not for the purpose of bringing before this association anything extraordinary that I have done. My address will be largely upon the subject of foundations, and my illustrations will demonstrate why they are so.*

The President: There is here a report of the committee upon the advisability of changing the subdivision of the standard foot from duodecimal to the decimal subdivision. Is it the pleasure of the convention that this reading be deferred until another session, or read now?

In the absence of the secretary, the president then read the report, which was as follows:

REPORT OF COMMITTEE ON METRICAL MEASURE.

*To the Western Association of Architects in Convention assembled, at Chicago, November 17, 1886.*

MR. PRESIDENT AND GENTLEMEN,—Your committee appointed at the annual meeting of 1885, to consider and report upon the advisability of changing the subdivision of the standard foot measure from duodecimal to decimal subdivisions, have the honor to report as follows:

The history of notations is not without interest. The simplest and best of known systems of notation, the Arabic, originated in the Indies, was improved by the Arabs; was introduced in Europe from the tenth to the fourteenth centuries, but not popularized until a later date. The advantages of this system were, and are so apparent, that we can only wonder that irregular denominate numbers of measure have maintained so largely their place in the world. It appears every way reasonable and wise to sweep them away into the limbo of the ancient notations.

There remains little difference of opinion as to the desirability of simplifying all our tables of measure. The proposition made some years since to introduce the metric system, found considerable favor, and we believe the failure of that proposition to have been largely caused by the opposition of those manufacturers upon whom the expense and annoyance of a change of standards of measure would have borne heavily.

In view of this experience, attention has been turned to reforms less sweeping, but still desirable. Among these we count the substitution of decimal for duodecimal subdivision of the standard foot. This is not radical, for the standard would not be changed. We suggest only the decimalization of the *fractions* of this *standard unit* of measure. The advantages resulting from such a change are obvious to all, but we may mention here:

1. Greater ease of operation in written calculations.
2. Greater certainty and rapidity in mental operation with numbers of measure.
3. Decreased liability to error in figuring drawings or in indicating any given dimension, said errors often arising from a mental confusion, caused by computing numbers decimally and duodecimally in the same operation.
4. A general saving of time and anxiety ensuing from the abandonment of a slow and complex method of work for one simple and rapid.

The American people could hardly be now pursuaded to use any other than a decimal system of coinage. Neither can we believe they would abandon decimal systems of measure, whether complete or partial, if such could be fairly introduced to general use.

On the other hand must be contemplated the cost of the proposed change. To the professional men interested this does not appear to be serious. But to the manufacturers of many kinds of products, it would occasion considerable expense and annoyance. We apprehend that manufacturers of mechanisms generally would find it more difficult to acquiesce in the change, than would other classes.

Your committee are, therefore, of the opinion that a period of debate and of preparation is necessary; that a general agreement must be sought upon the subject by a large and influential number of the interested professional men and of certain manufacturers.

It may be true that architects, if united could, in their own work, adopt the proposed change, and possibly after a time bring others to their support, but the building profession and trades are so closely dependant on the products of the mills that they would be annoyed in manifold ways by the conflict of measurement.

These opinions are not based upon a *thorough* investigation of the subject, nor fortified by inquiries reaching into all parts of the country.

In view of these limitations, your committee respectfully recommends that the Western Association of Architects appoint a committee of three or more, whose duty it shall be during the ensuing year, to confer personally or by correspondence, with representatives of the American Institute of Architects, the several civil and mechanical engineers' societies, and the leading interested manufacturers of the country, to seek with them for a common line of action, and to ascertain from many sources if this reform be practicable. We further recommend, that following such appointment, an official notice of such action by this association be forwarded to the societies and others above named, asking for the appointment of similar committees on their part, or for such other consideration of the subject as to them may seem wise and proper.

D. W. MILLARD, *For the Committee* { D. W. MILLARD, T. B. ANNAN, E. T. CARR.

My colleague, Mr. Annan, of St. Louis, finding that he could not be present, has forwarded the following notes upon the subject:

"There can be no question as to the vast economy in time and labor which such a change would effect. If that man is a benefactor who makes two blades of grass grow where grew one before, then as well is he a benefactor who makes one figure answer where two were before required. The self-evident character of the benefits to be derived almost obviate the need of logical argument. It is only necessary for one to undertake a simple multiplication of 2 feet 7¾ inches by 3 feet 9⅞ inches to convince himself of the folly and waste of time of the present stupid adherence to a practice, respectable only on account of its age. Another and more practical illustration has occurred within my own experience. It was sent some years ago to my employer in company with a sworn measurer to measure up the quantities of plastering in a recently finished house adjacent, but of a different plan. My companion with his assistant used the ordinary tape line and subdivision of twelfths, while I used an engineer's line with the decimal subdivision. My measurements and reports were made and rendered the same day. The sworn measurer's statement was not ready until late the day following, and was *then corrected by my figures*, which, after two or three tests, were found to be more correct, and infinitely easier of apprehension.

"The necessity for reform in this matter has been emphasized by both the French and German governments in their adoption of another method—the metrical system. In the latter country the change was brought about in this way essentially. A law was passed changing the old cumbrous system to the metrical system, the change to go into effect five years after the date of the passage of the act, and meanwhile in all the schools throughout the empire the metrical system was taught and the old system ignored. The very natural result followed that at the time appointed the new and better system quietly went into effect, without hitch or jar. The process of education had been going on in the schools and at home, the new generation knew only the better system; the fathers, mothers, uncles and aunts learned it from the children—and the thing was done.

"In 1876, the centennial year, as many members of the Western Association of Architects will recollect, there was circulated extensively, and almost as unanimously signed, a petition or paper in the nature of a memorial to congress for the adoption of the metrical system by the general government. It met the fate of most such unselfish efforts, but its advocates, I believe, were not and are not now discouraged, for I am informed that they have a living organization, with means, intelligence and some literature at their command. To inaugurate a movement of this kind with the hope of success, it must be national, not local nor sectional. It would not do for the architects of a single state in convention assembled to boldly declare their independence of antique but inconvenient custom, without the hearty concurrent action of their neighbors east, west, north and south of them, and the limit of the definition of neighbors could result in a geographic definition of the boundaries of our country. The change is one which will, if wrought at all, be brought about gradually and only by a persistent and systematic effort on the part of the members of this association, working harmoniously in conjunction with the other liberal and scientific societies of the country. It is, therefore, my view that this association should, if their wisdom so direct, appoint a committee of conference, whose duty it should be to enter at once into correspondence with the various scientific and other bodies of the country having this matter in view or in interest, to elicit from them such further information, advice and assistance as may best further the changes sought to be made and to report the result of their labors at the next annual convention of this association. Without a more complete knowledge of what is doing and has been done by others in the same or nearly adjacent fields, we cannot work intelligently or harmoniously; one discouraging fact is this, that engineers have been using this system for years for their own convenience and then *retranslating* their decimal work into duodecimal terms, because contractors and others will not learn the better, or unlearn the more cumbrous method. That is the case in the city engineer's office in St. Louis and is doubtless paralleled elsewhere. What, then, is the remedy for wilful adherence to a recognizedly burthensome custom? Clearly that question has been answered by the action of the German government, and if we hope for any such measure of success as they have attained, we must begin as they did, and get our foundations right; then and not till then shall we have begun a house not built upon sand. Patience must be called to her work, for immediate results are not to be expected."

The following letter bearing upon the subject was also received.

*D. W. Millard, Esq.:* LEAVENWORTH, Kan., November 16, 1886.

DEAR SIR,—In reply to yours of the 9th inst., concerning the report to the Western Association of Architects of the committee appointed last year to consider the propriety of adopting the decimal division of the standard foot, I have to say, that on account of sickness in my family I cannot be present to assist you, very much to my regret. I am heartily in sympathy with the proposed change, or any move that may tend toward that end.

I have talked with many during the year, and have found the sentiment generally in its favor, but the question seems to be, How shall it be done?

I am of the opinion that each branch of the mechanical industries of the country must lend a helping hand. The architects in convention can resolve to adopt the system, and if persistently adhered to by all, will accomplish something. Those in charge of railroad shops can do much. The machinists as much more. The civil engineers will help, and so on through the list. A large portion of them have their organizations, and if they can be induced as bodies, to make a move in the proper direction, I believe the object may be accomplished. The next question is, who is to move, how, and when?

I am not prepared to report on any plan at this time, and believe it would be best to wait another year before attempting to do so. As the question has been sprung, I hope it may be fully discussed during the coming session of the Western Association, with the view, if favorably considered, of devising some means of securing the coöperation of all parties interested.

My own suggestion would be the appointment of a committee to prepare a brief address to the various mechanical societies of the country and others interested, and thereby obtain their views on the subject, and if favorable, their coöperation, this committee to report at the first meeting of the association following, with such suggestions as they may deem proper. Respectfully, E. T. CARR.

A Member: Does that mean to divide the foot into ten equal parts?

The President: Yes, sir.

Mr. Patton: If remarks are in order upon that point, I would object to the appointment of such a committee, as I would regard it of very little use. I should favor very much the metric system. It seems to me to divide the foot into ten equal parts would be of very little advantage, and very difficult to introduce.

Mr. F. Baumann: Having heard these remarks—which, I confess, somewhat astonish me—I would like to say that I did not believe such opposition among architects against any such a movement as is here offered. I will only say that in Germany they have had the duodecimal system for centuries, and a very mixed one, and no change in it has made very much more commotion than it would make here, where there is only a partial change to be made; and yet it was done, and everybody was satisfied, and I believe everybody would be here. It is a system which is only in accordance with good, ordinary, sound common sense, and there is little trouble with it, but everyone should be willing to have that trouble overcome, and I will say, for that reason, that I am very much in favor of the motion.

Mr. Jenney: In the French system the unit of measure is also the unit of weight. A cube of maximum density weighs a kilogram, and it is that that helps out that system so immensely. If we are going to make any change at all, we should take the metric system in toto.

Mr. President: In reference to this matter, I desire to add my opinion to those expressed by Mr. Patton and Mr. Jenney, and I wish particularly to refer to the emarks of Mr. Baumann and the changes he referred to as having taken place in the unit of measurement in Germany. The change that was made there was a radical one, such as that proposed by Mr. Patton and Mr. Jenney; it was a change to the metric system, embracing not only measures of length, with which we deal, but all others—of value, of weight, etc.; and I think it would be injudicious if we, as architects, were to propose the adoption of merely a little trifling reform, referring only immediately to the one unit of measure employed by ourselves in our work. If we really desire the decimal system, we should unite with other professions who are endeavoring to secure the adoption of the metric system; and while there is now no motion before the house with reference to this matter, as there is nothing but the consideration of the report of the committee on using the decimal notation of the foot, it might be well to suggest that the sense of the association be taken with reference to its attitude as regards a wider range of action; that is, as regards the adoption of the metric system as a whole; and I should be very glad to hear a little wider expression of opinion on that subject.

Mr. Baumann: Is there any movement going here to adopt the metric system?

A Member: Yes, sir.

The President: What is your pleasure in regard to this report?

Mr. Yost: This seems to be a very interesting subject, and I suggest that it be not hastily disposed of. I move that its consideration be postponed for the present, and taken up at some future time.

The motion of Mr. Yost was seconded and carried.

Adjourned.

* The paper is published elsewhere in this issue.

## SECOND DAY—AFTERNOON SESSION.

THURSDAY, November 18, 1886.

The President: Is there any business which any of the gentlemen here wish to present to the convention before we proceed to the reading of papers? If not, I will request Prof. Ricker to read a paper which he has been kind enough to prepare for this convention. Gentlemen, I have the honor of introducing Professor Ricker, President of the State Industrial University at Champaign, Illinois.*

The President: The Executive Committee wishes to report the names of some applicants for membership.

Sidney Smith: In view of the resolution that was passed this morning, would that refer to the names of members not proposed?

The President: One of these I know is a member of the association.

Mr. Root: The first of these names is that of Mr. Henry Walters, of Louisville, recommended by Mr. Crapsey; the other is that of Mr. M. F. Hair, Dubuque, member of the Iowa State Association, recommended by Mr. Adler.

The President: If there is no objection, both of these gentlemen will be declared members of the Western Association.

The secretary read the names of Messrs. E. J. Eccles, member of the Missouri State Association, and also Henry T. Kley, of Chicago, recommended by Mr. Schaub.

It was moved and seconded that the secretary cast one ballot in favor of the election of these gentlemen.

The motion was carried, and they were declared duly elected.

The President: Gentlemen, I have the pleasure of introducing to you Mr. Isaac Hodgson, of Minnesota, who has been kind enough to prepare a paper for us.

Mr. Hodgson: Mr. President and gentlemen of the convention: During the few spare hours I have had in this great city, I have jotted down a few remarks on what I may entitle, "Hints on a National Style of Architecture."*

The President: There is still another paper on the programme for this convention. Mr. E. H. Ketcham, of Indiana, has been kind enough to prepare for this convention a paper embodying the results of his experiences in the erection of insane asylums, and as there is still a half hour or more at our disposal, would Mr. Ketcham be kind enough to favor the convention with the reading of his paper?*

After listening to the interesting paper presented by Mr. Ketcham the meeting adjourned.

## THIRD DAY—MORNING SESSION.

FRIDAY, November 19, 1886.

The president called the meeting to order at 11 A.M. and requested Mr. Flanders to act as secretary *pro tem* during the momentary absence of the secretary.

The President: I find on my table the following resolution moved by N. S. Patton:

*Resolved*, That the report of the Committee on the Decimal Division of the Foot be received and placed on file.

*Resolved*, That this association recommend the adoption of the metric system of weights and measures, and that the president appoint a committee whose duty it shall be to correspond with other organizations interested in this subject, and, in connection with them, petition congress to pass a law making the use of the metric system compulsory after a reasonable period.

The resolution was seconded.

A Member: Do I understand that the tendency of this motion with regard to the metrical system is to bind us to its use?

The President: No, sir; the object of the resolution is that this association declare in a general way that it is its sense that the adoption of the metric system throughout the United States is desirable; and, next, that it coöperate with a number of other associations who are advocating the adoption of the metric system in the United States, and that all of these associations jointly petition congress to cause the adoption of the metric system after giving a reasonable period of warning for purposes of preparation, something similar to what was done in Germany, as Mr. Baumann told us yesterday, where the metric system was adopted with the notice that it would be introduced and would become a measure of length, of contents and of weight after five years from its passage. From the date of the passage of this enactment, instruction in the schools was confined to the metric system; all children in the schools learned its use, manufacturers changed their gauges and their tools so as to adapt them to the uses and wants of the metric, and the people generally familiarized themselves with it, so that when the change came it was made without difficulty and without friction. The young had been taught that the sooner they became acquainted with it the better, and the older ones had already familiarized themselves to some extent with it. The five years elapsing between the passage of the law adopting the metric system and its actual adoption gave the manufacturers opportunity to make the necessary changes without undue expense; and I presume that the actions of the associations that have already been formed in this country for urging the adoption of the metric system will advocate a similar course of procedure, and that no sudden revolution will be attempted; it would be useless to attempt it anyway, because it would never be successful. I understand the metric system is already legalized in this country, and that we are at liberty to use it to buy and sell goods with, but, of course, it is impossible for any individual or body of men to adopt the system unless it is universal, and the only way to make it universal is to have a law making its use compulsory, as has been done, I believe, in most of the continental cities and countries of Europe; making its use compulsory from a certain date, of course, and leaving a sufficient number of years for it to adopt itself, and all the public schools teach it for years—I think the majority of the children are tolerably familiar with it; and it would certainly be a very light labor for us as architects to change from one system to another, though we cannot change it by ourselves.

* The paper is published elsewhere in this issue.

The secretary again read the resolution, which was carried.

The President: Is there any report from the Board of Directors?

The Secretary: The Board of Directors have two amendments to the constitution and by-laws to suggest: The first is that in section 4 of the constitution, the second clause be stricken out. I will read the whole clause so that you will understand it:

All members in good standing in any state association organized under the laws of that state, also all members of the American Institute of Architects who shall become subject to the constitution of the Western Association, are by virtue of such membership fellows of this association.

The President: It will be observed, gentlemen, that the resolution offered by your Board of Directors does away with the privilege now granted other state associations and chapters of the American Institute to elect members for us. It is not proposed to touch that clause by which members of those organizations are admitted without payment of an initiation fee, but it is the intention of the Board of Directors in offering this amendment to our constitution, to take away from other bodies organized perhaps without our knowledge of the character and standing of their members, to take away from those bodies the right to dictate who shall be members of this body, and to put the members of state associations and of the American Institute on precisely the same footing as anyone else who wishes to join this organization, as regards the desirability of his membership in this association—leaving that with us. The question remains as before. Is there anything to be said by any of you, gentlemen?

The amendment was called.

The Secretary: The second amendment relates to the same section, which shall read:

Honorary members of this association may be elected upon the recommendation of the Board of Directors, but all fellows of the association shall become honorary members when after three years honorable standing as fellows, they resign the practice of architecture. Honorary members shall not be entitled to vote, nor be eligible to office, nor shall they be assessed for dues or initiation.

The President: You have heard the recommendation of your Board of Directors. You will observe that its main purpose is to extend the limits of honorary membership, and to define the status of those engaged in the honorable practice of their profession who shall retire from the same, either for the purpose of retiring from the business entirely or for the purpose of following other pursuits. Your directors individually recognize the fact that many who have been members in good standing in this association and with whom we like to associate, whom we like to meet at our conventions and other gatherings, may, for good reasons of their own, see fit to change their pursuit; this enables us to retain the fellowship of these gentlemen without giving them such privileges as regards voting and holding of office as are enjoyed by those who are practicing actively the profession of architecture. Does any one wish to speak upon this resolution? Those who are in favor of its passage will please signify it by rising.

The motion was carried.

A petition that the association discontinue issuing its official proceedings through the channel of an official journal, having been presented to the convention by a combination of six journals, Mr. Randolph offered the following:

*Resolved*, That we reconsider the action taken when we appointed an official organ.

The resolution was carried.

Mr. Corser: I think the best way for this association is to publish its own proceedings in pamphlet form, under the direction of the secretary or some other duly authorized official.

Mr. Root: The publication of this report in pamphlet form, although it may be desirable to do so by the association, is a matter involving considerable expense. The funds of the association are not limitless, and a committee should go into it with fairness and report back the details of this scheme, so that we can act upon it with full information.

A Member: What is to be published in THE INLAND ARCHITECT would probably cost in the neighborhood of $1,000, and I understand that all that is for the benefit of the association, free of any expense. The other way it will cost us $300 or $400.

Mr. McLean: While I have nothing to do with this discussion, I would like to explain that the last convention number of THE INLAND ARCHITECT was issued within two weeks after the closing day of that convention, and sent to the most perfect list of architects probably existing in the United States, and to a large number besides, including the British Institute, and all the architectural associations in Europe and elsewhere, and if any member did not get it, it was the fault of the mails.

A Member: Mr. President, I do not feel at all disposed to find fault with "the bridge that carries us over"; I feel, as no doubt a large number of others do in the room, under very great obligations to THE INLAND ARCHITECT. It has done much to build up the profession in the West, and as such I am disposed to give it all credit and honor; but at the same time I do think that this body, while it might have an official organ, certainly ought to issue its proceedings under some official committee; it seems to me there ought to be a publication committee, or it ought to be issued under the authority of the Board of Directors. I would favor some such movement as that.

After considerable discussion, a resolution was passed, authorizing the Board of Directors to publish the proceedings in pamphlet form, to employ a stenographer in the future, and the motion made two years ago, making THE INLAND ARCHITECT AND BUILDER the official journal was reconsidered and laid on the table.

Mr. Hellmers: While I dislike, at this late hour, to bring business before the convention, I think there were some matters passed over yesterday rather hastily, that well deserve to be reconsidered, and one of those is our method of electing new members. We decided yesterday to elect new members by ballot, but we made no provision of the time when applications for membership should be presented to the Executive Committee, leaving it in the same bad shape that it now is, that these names are brought in the day before the convention meets, and give us no time to look up the record or consider the standing of the applicants; and I move that this be added to our clause covering the election: That all names of candidates be presented to the Board of Directors and by them sent to all members

of the association thirty days before the meeting of the convention. That will give to members who did not attend, but still know something of these candidates, which, if the convention knew, would, perhaps, prevent our electing them, an opportunity to send to the secretary of the association their objections to the men, and then cast their letter. The motion is in writing.

The President: It is moved and seconded that the following be added to the resolution passed yesterday, regulating the election of new members:

*Resolved*, That all names of candidates be presented to the Board of Directors, and by them sent to all members of the association thirty days before the meeting of the convention.

The motion was carried.

A Member: Are there any rules of order adopted by this association?

The President: Roberts' Rules of Order. Before proceeding to the election of officers, which perhaps is the only business remaining to be transacted by the association, I wish to call attention of the members to the position of several architectural associations formed about the country, with the ostensible purpose of coöperating with, or coalescing with this association. These associations call themselves city associations—for instance, there is the Buffalo Society of Architects. The members of these associations desire admission to membership in this association upon the same conditions as those allowed the members of state associations; that is, the remission of the initiation fee. I think it would be good policy if this association were to acknowledge such legal organizations; and I will retire from the chair long enough to offer as a motion, this:

*Resolved*, That the members of local architectural associations in cities where no state organization exists, be allowed the privileges of members of state organizations as far as the admission to membership without initiation fee is concerned.

The motion was seconded.

Mr. Randolph: I would like to offer an amendment to that. I think that may get us into some trouble. I think it would be better if that matter was referred to the Board of Directors with power to act, in whom we have implicit confidence.

Mr. Illsley: As I understand the motion, it is not that we admit these members, but that we remit the initiation fee. By previous action the election of all members has been placed with the association, and no state association or others are entitled to have its members admitted. But if we do admit them, shall we charge them an initiation fee?

Mr. Randolph: I understand it precisely as Mr. Illsley does.

The President: You have heard the substitute of Mr. Randolph, that the resolution I have offered be referred to the Board of Directors.

Motion was carried.

The President: Are the committees on nominations for the place of meeting for the next convention, and election of officers for the ensuing year ready to report?

The committees not being quite ready, the president continued: Among the papers prepared for reading at this convention is one by Mr. Illsley. It was impossible to read the same yesterday because of the absence of Mr. Illsley. It would properly come up for reading now before proceeding with the election of officers.

Mr. Illsley: On account of the lateness of the hour, I have not the face to trespass upon your patience longer, and I offer this resolution: that this paper be considered as having been read, and be published with the proceedings. The suggestion was accepted.

The President: I have here the reports of the two committees on nominations. One committee reports as follows:

Your committee to select the location for our next convention, and to nominate officers for the ensuing year, begs leave to present the name of Cincinnati, Ohio, as the most favorable location; and also to present the following names for officers for the ensuing year: For president, John W. Root; for secretary, J. F. Alexander; for treasurer, S. A. Treat; for directors: G. W. Rapp, C. Crapsey, D. H. Goodwin, D. Adler and C. C. Hellmers.

The other committee reported as follows:

Place for holding the next convention: Chicago.
For president: Sidney Smith; secretary, J. W. Root; treasurer, G. W. Rapp.
For directors: D. H. Burnham, Wm. Holabird, C. L. Stiles, G. M. Goodwin, C. C. Hellmers Jr.

Mr. Crapsey: Coming from Cincinnati, I feel honored that the committee have recommended that city for the holding of the next convention, and on behalf of the Ohio state association and particularly of Cincinnati, I desire to say that we will be very glad indeed to have you all present next year. I hope that Cincinnati will be selected as the place for the next convention. To be sure we cannot offer you anything like the architectural beauties and magnificence of Chicago, but we can offer you something in the way of scenery that you have not got here. Cincinnati is a good deal like the city of Zion we have read about: It "stands with hills surrounded." I hope that you will appoint Cincinnati as the next place of meeting and that you will all be present.

Sidney Smith: I rise to offer a proposition for your acceptance. I withdraw my name as nominee for president in favor of Mr. John W. Root, and at the same time offer a resolution that his election be made unanimous.

The President: I suppose it will be necessary for Mr. Root to cast one ballot for himself. It is moved and seconded that the secretary be instructed to cast one ballot for Mr. John W. Root for president of this association.

Mr. Root was unanimously elected president.

Mr. Root: Gentlemen, this is certainly a very embarrassing position for a man to be placed in. I can never appropriately describe to you my gratitude for the honor you have conferred upon me, and can only say that in the discharge of the duties that may devolve on me I shall do my best to satisfy you, and if hard work will accomplish it I shall promise that you will all be satisfied. (Applause.)

The President: The ballot upon fixing a place for the holding of the next meeting is as follows: 56 votes in favor of Cincinnati, 31 in favor of Chicago, and 4 for St. Paul. The sense of the convention, therefore, is to hold the next convention at Cincinnati.

The President: While the ballots are being taken, I wish to announce to the convention that it has been determined by Mr. Root and myself to postpone the announcements of standing committees until we shall have had time to take counsel as to the best appointments to make. It will be done before the members leave the city; those who are upon committees will be notified, and due publication will be made.

The Secretary: I would like to say on behalf of the Executive Committee, that in the matter of certain complaints received from the State of Indiana, made by individuals against certain members of the association, the Executive Committee has passed the matter over to the next executive committee for their action, deeming it to be a matter that the future executive committee could act upon with considerably more information, and with probably better results, than the present outgoing committee; so that in the relations of all petitions, in the matter of unprofessional conduct with members of the association, the future members of the executive committee will take definite action.

Mr. Hellmers: As Cincinnati has been selected as the place for our next convention, and as my name appears upon both of the tickets much against my will, I would request that the committees presenting my name place a Cincinnati man on our ticket to take my place, thereby giving the majority of the Board of Directors in Cincinnati, which they very much need, and I will assure the members of this association that my labors will be just as earnst and as well-meant as they would be in any position they could put me.

After some discussion, Mr. C. A. Curtin, of Louisville, Ky., was placed in nomination.

The President: The Board of Directors send in the names of two applicants for membership: W. W. Carlin, of Buffalo, recommended by Mr. Alexander; and Mr. Geo. W. Thompson, of Nashville, recommended by Mr. Alexander.

Mr. Ketcham, having moved that the ballot be dispensed with, and that the secretary be instructed to cast one favor vote for each gentleman, the motion was seconded and carried, and the gentlemen were declared duly elected to membership.

A Member: I move that the thanks of the association be extended to the Illinois State Association, for their very generous hospitality.

The motion was unanimously carried.

Mr. Rapp having withdrawn in favor of S. A. Treat, Mr. Treat was unanimously elected treasurer.

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| President | Jno. W. Root, |
| Secretary | J. F. Alexander, |
| Treasurer | S. A. Treat. |

BOARD OF DIRECTORS:

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|---|---|
| Dankmar Adler, chairman | Chicago. |
| George W. Rapp | Cincinnati, O. |
| Charles Crapsey | Cincinnati, O. |
| G. M. Goodwin | St. Paul, Minn. |
| C. A. Curtin | Louisville, Ky. |

The convention adjourned, to meet the third Wednesday in November, 1887, at Cincinnati, O.

## Boston Master Builders' Association,

AT a special meeting of all the members of the Master Builders' Association, of Boston, several hundred in number, held October 5, the following code of working principles for the year 1887 was unanimously adopted:

The Master Builders' Association, of Boston, after conference with the real estate owners and architects of the city upon certain aspects of the labor question, do hereby adopt the following code of working principles, in the hope that it will be accepted by all concerned as a rational and conservative method of meeting labor agitation in its relation to the building trades:

ARTICLE I.

Change in method of payment for labor performed—Beginning at a date not later than the first day of April, 1887, we will pay for all work performed by journeymen or laborers in our various trades at a certain price per hour. This price per hour shall be a matter of agreement between the individual workman and the individual employer.

This change is not intended to apply to work known as "piecework" or work "by the year."

ARTICLE II.

Hours of labor—In order to test rationally the question whether ten hours per day is too long for men to labor, and whether a less number of hours can be accepted as the measure of a day's labor without seriously retarding business enterprises, we will begin the first day of April, 1887, to work nine hours in each working day, beginning at seven o'clock A.M. and ending at five o'clock P.M., with the usual hour at noon for dinner, under payment by the hour, as set forth in Article I. All work done before seven o'clock A.M. and after five o'clock P.M. to be paid for as overtime at such price as may be agreed upon by the workmen and employers.

We will continue on this plan during the year 1887.

If it is demonstrated that this change can be made without detriment to the interests of the workmen or the owners, then the contractors will be satisfied, and if further reductions seem desirable, they can be considered at the close of the year, when this experiment shall have had a fair trial.

If, however, there should be displayed a desire to disturb this trial by bringing on any general strike during the year 1887, then we shall feel at liberty to return at once to the old standard of ten hours.

ARTICLE III.

Protecting clause in contracts, etc.—For the greater security of the contractor, we will demand the insertion of a clause in every building contract relieving the contractor from any forfeiture or demurrage on account of delays caused by strikes. (This demand, we are assured by real estate owners and architects, will be cheerfully granted.)

In case of a general strike, those men who wish to work and will work, will be kept employed as long as there is anything to be done, and will be protected in their employment, provided they do not aid and assist the strikers by contributing to their funds; but men who engage in the said strike will not be reëmployed until the said strike is completely over, or until they, as individuals, are willing to go to work on the same terms as above stated In the event of a strike in any one special branch throughout the city, the men who will continue at work in that special branch will be kept employed the same as in a general strike, and all other branches of building will be continued with such men as will not contribute to support the strike.

When a point shall be reached upon any building or buildings where further progress is blocked because of the said strike in a special branch, then the contractors in that special branch shall not be pushed or forced by their co-contractors to complete their work, but the said building shall be allowed to remain incomplete till a reasonable and satisfactory settlement be reached.

ARTICLE IV.

Improper interference with business—Certain workmen have of late very improperly interfered with the carrying on of work by striking, or threatening to strike, for

the most trivial causes. As follows: Because certain other workmen were employed; because certain workmen were not employed; because certain workmen were discharged; because certain stock was used or was not used; because more than a certain number of apprentices were taken on, and for other equally untenable reasons. They have also intimidated certain fellow-workmen by threatening that they would prevent their getting employment by refusing to work with them unless they joined certain societies. Such practices we condemn as most unfair and intolerable, and we agree that in case any workmen interrupt and embarrass our operations by such procedure, we will promptly discharge them and notify our fellow-members of the discharge. We also agree that all conspiracies shall be prosecuted to the extent of the law.

ARTICLE V.

Arbitration—It shall be, as it always has been, the recognized right of the group of workmen in the employment of any individual contractor in the building trades, to demand and receive from their employer a hearing upon any grievances that may arise, or any changes that may be desired, and at this hearing they can elect to be heard through a spokesman chosen from their number, or by their individual voices, but no person outside the employment of the said contractor will be allowed to represent them. If amicable ground of settlement is not reached through such hearing, then the grievances shall be left to arbitration (should the terms of such arbitration be mutually agreed upon by the employer and his workmen) in the same manner that other business disputes and complications may be settled.

AGREEMENT.

We, the undersigned, in our individual capacities as contractors in the various branches of constructive work used in the erection of buildings, and as members of the Master Builders' Association, of Boston, hereby mutually agree that we will aid, support and assist each other in maintaining the same stand against improper dictation as that taken and successfully held by us during the strike of May and June, 1886.

We pledge, in addition, that we will aid, support and assist each other in carrying out the letter and spirit of the propositions above described as our code of working principles for the year 1887.

We further agree that should we differ from the opinion of the majority of our fellow members, we will not in any way embarrass their purpose, but, recognizing the fact that uniformity of action is necessary for the proper trial of a scheme like this now proposed, we will faithfully carry out and support the plan agreed upon by the majority during the year 1887, and agree that any member deviating from the action decided upon by the majority will be considered amenable under Section 3, Article VIII, of our by-laws.

In testimony of our assent to the agreement and propositions before mentioned, we hereunto affix our signatures, and agree to faithfully adhere to the principles set forth.

We invite all contractors in the building trades, whether located in this city or in any of the cities of New England, to join with us in this attempt to make fair trial of a scheme calculated, we trust, to set at rest labor agitation in our trades, and maintain unimpaired that necessary control and authority, without which no enterprise can succeed. We invite all such contractors to call at our rooms and append their signatures to this code of working principles.

WILLIAM H. SAYWARD,
Secretary M. B. A.

## Manual Instruction in the United States.*

SOME idea of the need of instruction in the mechanic arts in the United States was probably present in the minds of the senators and representatives when the Land Grant Act of 1862 was passed. A clause in this act reads as follows: "The leading object shall be, without excluding scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts in such manner as the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The report of the Secretary of the Interior on industrial education, 1882, gives a list of forty-two different schools and colleges in various parts of the union which owe their existence to this land grant. Most of these are agricultural and engineering colleges. The words in the act in regard to teaching such branches of learning as are related to the mechanic arts being usually interpreted to mean instruction in the use of carpenters' and machinists' tools. Of these land grant schools, the best known are the Massachusetts Institute of Technology, in Boston, and the Hampton Institute, at Hampton, Virginia. Each of these illustrates an interesting experiment in industrial education.

The Massachusetts Institute of Technology might properly be called a school for foremen, as its graduates can be found superintending industrial establishments all over the United States. The pupil in weaving, for instance, is required to design or copy a pattern, and then work it out on the loom. In molding, he makes a drawing, models the wooden pattern from it, and casts the pattern in the metal. The course of instruction is four years, mathematics, chemistry, history and the modern languages forming a part of the educational scheme. Hampton Institute was founded by General S. C. Armstrong as a normal school for colored teachers. General Armstrong, while serving as a staff officer at Fort Monroe, during the war, was brought in contact with the fugitive slaves who took refuge at the fort.

When slavery was abolished, and four millions of men, women and children became the wards of the nation, General Armstrong conceived the idea that they could best be educated and civilized by the aid of their own people. It was as necessary to teach this vast multitude, who had never been beyond the sound of a master's voice, how to work for themselves, and how to care for themselves, as it was to teach them to read and write. Manual instruction was therefore a necessity at the Hampton Institute. The male graduates were to be leaders on the farm or in the workshop, as well as teachers. The female graduates were to be capable of cooking, sewing, or caring for the sick. How thoroughly and successfully this scheme has been carried out need not be stated here. Another type of the industrial school is to be found in the Worcester (Mass.) Free Institute. At this institution three and a half years of general education is combined with instruction in mechanical engineering, in carpentering, and in machinist's work. This school more nearly approaches the trade school, as many of its graduates are returned as "journeymen mechanics."

The Worcester school was founded by private liberality. Without such aid, it may be added, neither the Massachusetts Institute of Technology nor Hampton Institute could have reached its present usefulness. In the European technical schools provision is made for instructing young men already in the trades by a course specially adapted to their wants. In this country this important branch of industrial education has received but little attention. The Carriage Makers' Association in this city maintain a school in designing and construction for the young men in their trade. The Master Plumbers of Philadelphia, Baltimore and Chicago have plumbing schools for their "helpers." The Cambria Iron Works in Pennsylvania, and several private firms like R. Hoe & Co., of this city, give scientific instruction to their lads, while two railroad companies, the Pennsylvania and the Baltimore & Ohio, have shown not only what is possible to do, but how much can be done at a trifling cost for the young men in the employ of great corporations.

Beyond this short list, little has been done to supplement shop work with systematic instruction. In the Baltimore & Ohio Railroad Company's shops at Baltimore five hundred young men are employed. They are placed in charge of a graduate of the Stevens Institute, whose duty it is to see that they are not employed too long at one kind of work. He can change their work as often as it may seem desirable for their future interests. He can also take parties of them from their work at any time to explain to them the machinery they may be engaged upon or may see around them. A neat building has been erected for their use, which contains a library and class rooms for instruction in mechanics and drawing. The lads are required to wear a uniform, which, besides giving them a jaunty appearance, tends to habits of personal neatness. What is done by the Baltimore & Ohio Railroad Company could be done in any manufacturing town by the union of a few large employers. * * * * *

Manual instruction has already been incorporated in the public school systems of Boston and Philadelphia. The New York Board of Education has maintained for several years a workshop at the Free College. It now proposes to open schools all over the city, where boys and girls will be taught to use their hands. A great impression was made last spring by the exhibition, held by the Industrial Education Association of New York, of children's handiwork, and of the different methods of teaching them how to work. Not only was it shown what varied and excellent work little fingers could do, but school teachers and superintendents came to testify that the brainwork was benefited by the handwork.

* Col. R. T. Auchmuty on "The Need of Trade Schools," in the *Century* for November.

## Obituary.

AT a meeting called on November 20 for the purpose of taking action regarding the death of Daniel Goodman, the following resolutions were passed:

WHEREAS, We learn with regret that Mr. Daniel Goodman, one of the earliest builders of Chicago, has departed this life on November 18, 1886; now, therefore, be it

*Resolved*, By the builders of Chicago in special meeting assembled, that we join in bearing testimony to his sterling character as a man, to his unchallenged honesty and integrity as a contractor and citizen. To know him was to esteem and love him, and those of us whose privilege it has been to meet him frequently during the thirty-two years he spent in this city, have lost a true friend, good neighbor and genial companion.

*Resolved*, That the above be given to the press for publication, and that a copy thereof be engrossed and forwarded to the family by the secretary.

BUILDERS' AND TRADERS' EXCHANGE, Chicago, November 20, 1886.

Eulogistic addresses were made by W. W. Boyington, George Tapper, Cornelius Price and J. W. Hambleton. The resolutions testify to the character and integrity of Mr. Goodman as a citizen and contractor.

Daniel Goodman was born in Ware, Herfordshire, England, May, 1829. He learned the trade of a mason from his father, and desiring to better his condition emigrated to America in 1854. Poor in purse but rich in hopes, his early struggles are but a repetition of all our early pioneers, realizing that knowledge is the Archimedian lever that moves the world, he devoted his energies to hard work at his trade during the summer months, and husbanding his resources attended the Williston Seminary, of Massachusetts, during the fall season, thus laying the foundation for his successful career. When feeling fully armed for this world's battle he moved to Chicago, in 1854, arriving here during the cholera epidemic. He then formed a partnership with his life-long friend, W. Hambleton, and the firm of Hambleton & Goodman constructed many of the old landmarks of the city. After a few year's residence here, finding his health failing, he returned to England, but, after a short visit, came back to Chicago, and resumed business on his own account. For the past twenty years Mr. Goodman has been a sufferer from insomnia, and though successful in his business transactions, his life has been one of long suffering, and it was a relief to him when he could say: "Weary, weary, O Lord, I lay down my burden and trust to Thy divine goodness."

FOR several years the Michigan Central has had in its Atlantic express a most admirable and convenient through car line from Chicago to Boston and other New England points, and its popularity has steadily increased. It has enjoyed a great advantage over its competitors, not only in the directness of its route and the splendid scenery of Niagara Falls, Central New York, the Mohawk, Hudson, Housatonic and Connecticut valleys, and the Berkshire Hills, but in its connections with the great four-track New York Central and double track Boston and Albany and its splendid equipment, making fast time with sureness and with safety. So the travel has steadily increased by this favorite route—"the great Central route, via Niagara Falls," as it is called—until the management has seen its way clear to another step forward in the interests of the traveling public. The Michigan Central has, in addition to its through Boston service on the Atlantic express, leaving Chicago at 7:45 P. M., placed a new and elegant sleeping-car on its New York limited express, leaving at 3:10 P. M. The already fast time of this train has been so shortened that it arrives forty minutes earlier at Buffalo and fifty minutes earlier at Albany. Here the Boston sleeper is taken by a new fast train of the Boston and Albany Railroad, leaving Albany at 4:05 P. M. and arriving at Pittsfield at 5:33 P. M., Springfield at 7:10 P. M., Palmer at 7:41 P. M., Worcester at 8:54 P. M., South Framingham at 9:33 P. M., and Boston at 10 o'clock P. M., instead of 6:25 next morning, as formerly. Hartford is reached at 8:55 P. M. and New Haven at 10:10 P. M., via Springfield. As this car does not leave Chicago on Saturday, passengers on the Limited on that day change cars at Springfield and Albany, arriving at Boston at 10:30 P. M., on the fast train from New York. A great feature of the ride to Boston by this train, beside the great saving of time, is that Niagara Falls is seen in the morning from the splendid outlook of Falls View, and the beautiful and picturesque scenery all the way to the mountains beyond Pittsfield is traversed by daylight.

# PUBLISHERS DEPARTMENT.

## Fireproofing, Fireclay and Paving Tile.

WHEN John B. Goss, associate of the Royal Institute of British Architects, as holder of the Godwin Bursary for 1885, visited the United States and, returning, read a paper upon "Some American Methods" before the Royal Institute. The subject of his exhaustive paper and the extensive sketches submitted was largely that of protection against fire in vogue, giving especial attention to incombustible or fireproof construction. As America is the home of that best and most adaptable method, the use of hollow fireclay tile, and it first came into use in Chicago, it is not strange that its development has rapidly increased within the last decade, so that no office building, bank, malthouse, and, much less, any public structure is considered at all substantial unless it is built with partitions, ceilings and roof of hollow tile, and all iron construction securely covered by different forms of the same material.

At Ottawa, Illinois, on the Illinois river, the Pioneer Fireproof Construction Company erected their works, in 1880, and it is there that a large percentage of all the fireproof material manufactured in the United States is made. The works are so extensive, the machinery so perfect and the clay so accessible, that recently when the company were fireproofing the Indiana state house at Indianapolis, probably the largest example of fireproof work ever accomplished, the facilities of the works were not noticably taxed, though the material for fireproofing many buildings but a small degree less in size was being turned out at the same time. But every architect is more or less posted as to these facts, though no thoroughly realizing sense of the magnitude of the fireproofing done can be attained short of a visit to these works. The superior quality and the accessible location of the immense clay beds lead the enterprising manager of the Pioneer Fireproof Construction Company, Mr. E. V. Johnson, to investigate farther the advisability of utilizing them farther. After repeated experiments it was found that here was to be found the finest fireclay for the manufacture of firebrick the country could produce, and here opened a new vista for manufacturing improvement. Not wishing to hamper an already established and rapidly growing business with the details consequent upon the construction and operation of an entirely new plant, a company was formed with Mr. Johnson at its head, for the purpose of first manufacturing firebrick and paving tile, with possibilities for other manufactures in the future. The acres of ground covered by the sometime largest starch works in the country, now through mismanagement or loss of trade, fallen into decay, the miles of shafting, the costly machinery and the substantial buildings standing idle, attracted the company's attention. The works were bought, and what will be a mammoth clay works was established. Procuring the best firebrick machinery to be found, the work of bringing the clay to the factory was considered. The necessary permit being granted by the city, to whose benefit this new industry would largely revolve, the company proceeded to lay a mile of railway from a large tract of clay to the works. The opening of this railway will formally occur in the near future, when the leading architects of Chicago and the West will be taken by special train to participate in the exercises and aid the City of Ottawa to rejoice in its new pioneer of prosperity.

The new works will start with a capacity for fifty thousand firebrick a day, and this capacity will be increased as trade demands. The clay beds of the company cover fifteen hundred acres, through which runs a 12-foot vein of the finest fireclay, and this inexhaustible supply, coupled with the superb facilities enjoyed, will soon call for a largely increased capacity. The manufacture of a vitrified paving block is also one of the manufactures in which this company will engage, and as this kind of paving has been tried and found to work equal to granite blocks, the development of this branch may also be looked upon with a degree of certainty. The Ottawa *Journal* says:

Mr. Johnson, the projector of this enterprise, has associated with him Messrs. A. T. Griffin and F. W. Moulton, of the Pioneer Fireproof Construction Company. The name of the new company has not been decided upon yet. Johnson is a young man with a heap of enterprise and public spirit; he is an enthusiast in the matter of Ottawa's natural advantages, and confidently believes that in the next ten years the population of the city will double. Last year Mr. Johnson traveled sixty thousand miles, and says that in all his travel he did not find a city with one-half the facilities for growing and inaugurating a boom than has Ottawa. Back of this new enterprise is ample capital, and with its completion we may reasonably look for the others to follow. It looks like the dawning of a new era, the setting in of a boom.

There is no doubt but that the possibilities for the Pioneer Fireproof Construction Company and the company newly organized are at present beyond computation, and as every new demand in construction is met by the inventive genius and enterprise of the manager of the concern, so will the demand for the different forms of firebrick and paving tile be fully supplied. Not only this, but the public may look for other products from those vast clay fields, that stretch out along the picturesque river, the center of the most beautiful of Illinois scenery.

A new building material is not impossible, cheaper than pressed brick, but as capable of architectural design and construction. When the swift but certain destruction of the vast pine forests that have furnished the homes for the people in the past has reached a limit where a material cheaper and more durable than wood is looked for, the Pioneer Company will be prepared to offer a substitute that will not only come into general use, but cause builders to wonder why it was not adopted long before.

These remarks should not close without again calling the attention of architects to the pleasure and instruction to be gained by a trip to these extensive works for the manufacture of clay products.

## Wolff's Transparent Paints.

WOLFF & RANDOLPH, of Philadelphia, have sent us a catalogue of their transparent paints, and we do them but meager justice when we say that it excels all compilations for a similar purpose, that we have yet seen. The title of the book precludes all questions as to what its purpose might be, i.e., to advertise their paints (which are very handsome), and the ingenious manner in which this has been accomplished is remarkable.

In the introduction, the reader's attention is called to the fact that the natural color of the wood is an important factor in the appearance of the paint; that is, that a color used on walnut, will not have the same appearance if used on pine. To illustrate this more effectively, the paints are shown on pine, birch, maple, chestnut, oak, walnut, and other veneers. Not mere representations of the wood, but the wood itself.

We can easily imagine what a vast amount of time, labor, and money has been expended in the production of such a novel and handsome work, and also readily see that a copy will be of benefit to every wood-worker. We refer to their advertisement on page

## Mosaics.

ARCHITECT M. D. Makepeace, of Auburn, New York, writes: "Please state in your next issue that I wish to obtain Vols. I to IV of THE INLAND ARCHITECT AND BUILDER. Parties desiring to dispose of same to state price on addressing me."

ACCORDING to a correspondent the following is the only mathematical paradox: Let $a = b$. Involving the equation, multiply by a, and it becomes $a^2 = ab$. Now, subtracting $b^2$, we derive $a^2 - b^2 = ab - b^2$. And again, dividing by $a - b$, we find that $a + b = a$. Therefore, by substitution of numerical values, $2 = 1$. Q. N. E. D.

INTELLIGENT people who are familiar with the respective advantages which are offered by the several competing railroad lines between Chicago, St. Louis and Kansas City, and who desire to travel with the utmost speed, safety and comfort, always take the popular and reliable Chicago & Alton railroad between these points, and passengers going to or coming from the South via St. Louis, or when going to or coming from the West via Kansas City, should insist upon having tickets that read over the Chicago & Alton. It is the only road with two complete and elegantly equipped dining trains daily between Chicago and each of the points named, and no railroad managers in America have a more intelligent appreciation of the wants of the traveling public than do those of the famous C. & A.

MESSRS. MERCHANT & CO., the well-known tin-plate manufacturers and dealers, in a recent advertisement in an exchange, quote the following from the *American Grocer:* "The larger part of our merchants, we believe, are honest in all things pertaining to their commercial life from principle; many are so for policy's sake. A troublesome minority are those who think any means to an end correct so long as they evade responsibility. A competitor who trespasses on the rights of another, stealing the results of his labor, is a sort of trade highwayman, bold, dangerous and possessed of unlimited cheek, which he is apt to call courage. To the honest merchant the competition of such men is very annoying, if not exasperating. Often they are driven to a point where they feel they must succumb or else change base and fight to win without regard to moral obligations."

ON the nineteenth of last September, according to the *Gazette des Architectes et du Batement*, the American residents of Paris inaugurated their new temple of the church of the Holy Trinity. The church is situated in the fashionable quarter of the Champs-Elysses, and fronts one hundred and fifty-three feet on the avenue of Alma. The construction is in the gothic style in stone and marble. The façade is simple. On one side the entrance of carved wood, in the center a splendid stained glass window represents the verses of the "Te Deum;" on the other side is the tower, to which the steeple has not yet been added. The interior of the church is divided into three aisles by columns of granite. The sanctuary is divided from the principal aisle by a grating of brass and iron, the altar is of black marble, covered with old embroidery work and surmounted with a cross in vermeil, incrusted with rock crystals. This cross dates from the fifteenth century. The pulpit is of white marble, with rich carving of leaves, the bishop's seat is of English stone. The baptismal fonts are of the same material, with marble pedestals. On the minister's desk is placed a Bible, the binding of which is of old silver artistically worked. The various pews around the altar are magnificent works of the carver's hand. In the entrance is to be noted the contribution-box. This box is of iron, and was purchased at a sale of a German monastery, and for more than four hundred years the faithful have deposited their alms in its care. The organ of the church is not yet in place. It will be a superb instrument, and will cost $10,000. We must also mention the twelve magnificent stained glass windows, the gift of American residents, in fact, the various articles

of value we have mentioned have all been donated. The cost of the building has been several millions of francs, and has been erected by Architects Street & Son, of London. The first stone was laid on the 4th of March, 1881, by the Rev. A. N. Littlejohn, Bishop, of Providence, Rhode Island.

## Building Outlook.

OFFICE OF THE INLAND ARCHITECT,
CHICAGO, ILL., December 1, 1886.

The building authorities east and west seem to unite in saying that this year has been a better one than last in building interests. The assertion is a safe one to make. The increase in investments will average about twenty per cent. Statements of this kind are largely guess-work. We have no building statistics from the hands of smaller cities, towns and hamlets throughout the country, and it is not safe to average building operations throughout the state by those of its leading cities. New York, Philadelphia and Chicago are fully twenty per cent ahead in their operations this year over last; Boston, Cincinnati and St. Louis will run not less than fifteen per cent. Cities like Toledo, Albany, Kansas City, and cities running in population down to 20,000, show a very encouraging condition in regard to their industrial and building operations. Building material has been light throughout this season and regular in prices. Brick, lumber, iron, steel, hardware, glass, etc., have shown very little change since the opening of the season. Labor was the only uncertain factor and that was speedily fixed. That which most concerns us now is the probabilities as to the future. All architects and builders agree that unusual activity will prevail in building operations during the winter. Architects have some very heavy work in hand both in eastern and western cities. A stronger indication is to be found in the encouraging activity in real estate. Advices from all the leading cities show that a great deal of real estate is changing hands for building purposes. Investers in the larger cities are picking up building plots and lots, intending to erect on them residences of greater or lesser cost to sell or rent. All of the leading industries are in excellent health. Beginning with railroad building we find that our construction this year will be about double that of last year when the season closes. Already the rail makers have sold rails enough to lay no less than 7,000 miles of road. The producing capacity will make about 15,000 miles all told including repairs. This points to about 7,500 miles as next year's railroad construction of main track. We find a great deal of activity among car builders. The locomotive makers have been booking large orders during the past few weeks. The smaller shops are all crowded with business. In commercial circles the same favorable reports are made from cities as far east as Boston, and from the farthest western distributing points. Manufacturers throughout New England and middle states are engaged in the production of spring supplies, and traveling salesmen are now scattered over the country taking orders from four to six months ahead of deliveries. The money markets are in good shape. The demand prevents any great accumulation at financial centers. It is fortunate for western borrowers that better facilities have been established of late for the lending and borrowing of money upon individual security. Farmers, mechanics, manufacturers and other small borrowers, who heretofore have been obliged to pay twelve to fifteen per cent and in fact frequently much more, are now able to obtain money at half those rates. This outflow of money from the East will continue. It may well be doubted whether a financial system which keeps one large wealth-producing section of the country constantly borrowing from the mere handlers of money is a sound system, but practical men have to do only with the fact that interests are crowding them to be borrowers and they have reason to congratulate themselves that the taxation is on the down grade.

We look forward to 1887 with more confidence than we looked forward to 1886 a year ago. The enormous railroad construction throughout the West and Northwest is the most important factor and promises the most excellent results. The building up of the Northwest will strengthen enterprise and labor. The opportunities for enterprise have never yet been measured and despite all the allurements which capital finds in the South it yet leaves a self-evident fact that the energetic and enterprising channels of activity find in the Northwest the strongest permanent investments. Our leading architects have knowledge of heavy investments in the way of shop and mill construction, manufacturing enterprises will push their way with greater force next year because of the more satisfactory returns realized during the past few months. The wider margins are drawing more money into the productive channels. The architects and the builders are the first to feel the improvement and they are already preparing for the busiest year they have ever had. The iron and steel makers will advance prices for several products likely but not sufficient to alarm enterprise. No speculative values are possible. The strength of the times is in legitimate values. The productive capacity will be increased fast enough to take care of builders and manufacturers and investing interests. The lumber market shows great strength, but the supply will in all probability be sufficient to meet their requirement without more than a legitimate advance. The improvement which lumber manufacturers anticipate is the legitimate one to which they are fully entitled.

## Synopsis of Building News.

**Arcola, Ill.**—Architect Geo. P. Washburn, of Ottawa, Kansas, reports: For P. M. Moor, frame dwelling, 30 by 55 feet; cost $2,500; under way.

**Auburn, Ill.**—Architect Fred Keltenich reports: For the Weber Wagon Company, addition to factory, three stories, 66 by 212 feet, common brick; cost $20,000.

**Buffalo, N. Y.**—Architects R. A. & L. Bethune: For Mrs. Collignon, a residence on Ellicott street; cost $6,000. For Abner Cutler, residence on Jewell avenue; cost $4,000. For School Board, public school building No. 31, on Oneida street; cost $30,000; M. McNamara and John Feist, builders. For Carl Lautz, residence on Dodge street; cost $4,000; E. M. Hager, builder. For Wm. Lautz, residence on Dodge street; cost $4,000; E. M. Hager, builder.

Architect W. W. Carlin: For Edward W. Evans, brick store building, on Seneca street; cost $12,000; Chas. Berrick, builder.

Architect H. H. Little: For City of Buffalo, public morgue on the Terrace; cost $6,000; John Druar, builder.

**Chicago, Ill.**—Architects Adler & Sullivan: For L. A. Eliel, two-story stone front residence, 25 by 65 feet, at 3538 Ellis avenue; cost $10,000; under way; V. Falkenan, mason; Hunt & Thom, carpenters. For E. G. Pauling, three-story flats, 20 by 74 feet, at 30 Scott street, Indiana pressed brick; cost $10,000; under way; V. Falkenan, mason; L. Seeman, carpenter.

Architect L. B. Dixon: For Henry Corwith, two three-story stores and flats, 52 by 95 feet, 552–554 West Madison street, St. Louis pressed brick, terra-cotta and brownstone trimmings; cost $28,000; under way; J. Angus, mason; A. White, carpenter.

Architect W. H. Drake: For Wm. Kasper, four-story stores and flats, 82 by 96 feet, Blue Island avenue and Nineteenth street, rock-faced stone front; cost $20,000.

Architect G. Isaacson: For F. T. Hills, two-story stone and frame dwelling, 28 by 45 feet, in Hyde Park; cost $5,000. For P. F. Munger, two-story stone and frame dwelling, 32 by 63 feet, in Hyde Park; cost $12,000.

Architect H. F. Starbuck: For J. S. Belden, three three-story stores and flats, 60 by 80 feet, on Forty-third street, Anderson pressed brick, Lemont stone; cost $12,000; under way.

Architect John Otter: For Mr. Kennelly, three-story stores and flats, 29 by 75 feet, corner of Huron and Sedgwick streets, Anderson pressed brick; cost $8,000.

Architect H. R. Wilson: For himself, two two-story dwellings, 40 by 70 feet, on South Park avenue, brownstone fronts; cost $16,000; under way; Geo. Lehman & Son, masons.

Architect H. Boyington: For J. W. Cochrane, two-story store and flats, 27 by 147 feet, on State, near Thirty-ninth street, pressed brick and stone; cost $8,000; under way; J. J. Rogan, mason.

Architect C. A. Weary: For O. L. Himkins, two-story dwelling, 20 by 50 feet, on Seymour street; cost $4,000; under way; Wm. Ilett, mason; C. J. McGee, carpenter.

Architect J. L. Silsbee: For Dr. E. C. Dudley, two-story dwelling, 24 by 50 feet, 1619 Indiana avenue; cost $12,000; John Mountain, mason; P. Jensen, carpenter.

Architect G. Thiel: For E. Hogenson, four-story stores and flats, 91 by 91 feet; cost $12,000; J. Rassmussen, mason; P. Pogenson, carpenter. For F. Klimer, two-story store, 26 by 30 feet; cost $3,500. For B. Ewert, three-story dwelling, 24 by 50 feet, at 424 Huron street, Indiana pressed brick, Lemont stone; cost $4,000. For O. Kouewsky, two-story store and flats, on Clybourn avenue; cost $5,000.

Architects Cobb & Frost: For P. H. Smith, two-story residence, 25 by 72 feet, at 106 Astor street, pressed brick and stone; cost $20,000; under way; Louis Weick, mason.

Architect H. Boehme, of Joliet, reports: For C., R. I. & P. R. R. depot at Fifty-fifth street; cost $2,500; under way; E. Lond, builder.

Architects Sprague & Newell: For N. F. Nickerson, two three-story stores and flats, 40 by 82 feet, corner Thirty-ninth street and Cottage Grove avenue, Indiana pressed brick, brownstone trimmings; cost $15,000; under way; John Griffiths, mason; Wm. Goldie & Son, carpenters. For O. Burdick, five two-story dwellings, 100 by 60 feet, on Oakwood avenue, brownstone and white brick; cost $20,000. For W. H. Mosher, four two-story dwellings, 78 by 40 feet, on West Jackson street, brick and Lemont stone; cost $10,000; under way; T. C. Homan, mason; W. Collins, carpenter.

Architect W. H. Adams: For Barnard & Calkins, three-story dwelling, 20 by 70 feet, 3213 Groveland Park avenue, pressed brick, stone and terra-cotta; cost $10,000; under way; Geo. Lehman & Son, builders.

Architect J. H. Carpenter: For J. Kramer, four two-story dwellings on Robey street near Adams, rock-faced stone fronts; $14,000.

Architects Flanders & Zimmerman: For J. B. Mallers, two two-story dwellings, 40 by 50 feet, 32–34 Groveland Park avenue, brownstone fronts; cost $18,000; under way; day work.

Architect W. Ohlhaber: For Theo. Schulze, four-story store and flats, 24 by 80 feet, corner of Division and Robey streets, St. Louis pressed brick and terra-cotta; cost $11,000.

Architects Miller & Thaier: For P. D. O'Neil, three-story store and flats, 30 by 100 feet, 683 West Lake street, Anderson pressed brick; cost $10,000.

Architect R. G. Pentecost: For Henry Sweet, three-story stores and flats, corner Wentworth avenue and Twenty-second street, Anderson pressed brick; cost $75,000; under way.

Architect J. F. Doerr: For Jacob Schneider, three-story store and flats, 24 by 76 feet, Indiana pressed brick, Lemont stone; cost $7,000; under way; F. Happe, mason; Ruettner Bros., carpenters.

Architect H. Rehwaldt: For B. Harris, two three-story stores and flats, 50 by 55 feet, 315–317 West Lake street, pressed brick and stone; cost $8,000; A. Holpuch, mason; Peter Welter, carpenter.

**Girard, Kan.**—On November 22, the Presbyterian Church was completely wrecked by cyclone.

**Chippewa Falls, Minn.**—Architects Willcox & Johnston, of St. Paul, report: For School Board, brick and stone school house, 42 by 60 feet; cost $28,000; under way.

**Eau Claire, Wis.**—Architects Willcox & Johnston, of St. Paul, Minnesota, report: For First Congregational Society, stone church building, 75 by 120 feet, seating capacity 600 persons; cost $32,000; under way.

**El Dorado, Kan.**—Architects Hadley & Cooper, of Topeka, report: For the city, three-story city building, 47 by 80 feet, stone, tin shingle roof; cost $10,000; plans under way.

**Faribault, Minn.**—Architects Willcox & Johnston, of St. Paul, report: For Shattuck School, Shumway Hall building, 40 by 160 feet, built of stone; cost $60,000; under way.

**Fort Smith, Ark.**—A $50,000 jail building is to be erected here; J. H. Reid, superintendent. Architect J. S. Skidmore has prepared plans for a $6,000 church building to be erected here.

**Fort Wayne, Ind.**—Architect H. W. Matson reports: For Keller Medicine Co., two-story brick store building, 40 by 85 feet, stone trimmings; cost $5,000; under way; Jacob Baltes, builder. For S. Bard, two three-story stores, 40 by 75 feet, brick and stone, galvanized trimmings; cost $6,000; under way; John Surlzer and Henry Hesemeier, builders. For Frederick Roth, two-story and cellar double brick dwelling, 46 by 62 feet, stone trimmings, slate roof; cost $6,000; projected. For Henry Keller, brick dwelling, 30 by 52 feet; cost $2,000; under way; Fred Brandt, builder. For B. L. Post, two-story brick store building, 24 by 60 feet; cost $3,000; projected. For Henry Schone, brick residence, 28 by 60 feet; cost $2,500; under way; Wm. Hilgemann and Miller & Schall, builders.

**Goshen, Ind.**—The English Lutheran Church (Cass Chapman of Chicago, Ill., architect, J. N. Barnett, pastor) is rapidly approaching completion. Plastering is being done, and spire erecting. Building is 38 by 70 feet, built of brick. Contracts include stained glass, hot-air heat, opera or assembly chairs, frescoing, bell, pulpit, and pulpit chairs, altar (table), curtains and rods, carpet, etc.; M. F. Isbell, superintendent.

**Hamilton, Ohio.**—Architect Max Reutti reports: For C. & P. Benninghoffen, two-story brick livery stable, 50 by 182 feet, galvanized iron cornice, tin roof; cost $7,000; under way. For John Kreigenhoffen, two-story frame dwelling; cost $600; projected.

**Junction City, Kan.**—Architects Hadley & Cooper report: For School Board, two-story brick school house, 48 by 55 feet, tin shingle roof, galvanized iron cornice; cost $8,000; under way.

**Kinsman, Ohio.**—Architects Kanengeiser & Kling, of Youngstown, report: Plans prepared for Joseph McGranahan for a two-story stone and frame residence, 65 by 80 feet, slate roof, hardwood finish, wood mantels, steam heat, dumb waiters, electric bells, speaking tubes, closets, bath, stained glass, etc. Also a frame stable; to be commenced early in the spring. Bids being received.

**Lancaster Co., Neb.**—Architects Willcox & Johnston, of St. Paul Minn., report: For Hon. W. H. Stout, stone residence, to cost $100,000; under way.

**Larned, Kan.**—Architects W. R. Parsons & Son, who reported the Opera House building in our last issue, are located at Topeka instead of Emporia, as we stated in the report.

**Lincoln, Neb.**—Architects Willcox & Johnston, of St. Paul, Minn., report: St. Paul M. E. Church, stone building, 85 by 150 feet; seating capacity, 2,000 persons; cost $35,000; just completed. For the University, brick and stone chemical laboratory, 40 by 120 feet; cost $33,000; just finished.

**Louisville, Ky.**—Architects McDonald Bros. report: For Third English Lutheran Society, brick and terra-cotta church building, 76 by 85 feet; cost $15,600; projected. For Z. T. Carsons, brick and terra-cotta dwelling; cost $6,500; projected. For S. I. Force, tobacco factory; cost $12,000; under way; John Wise, builder. For Spirit Cure Tobacco Co., tobacco factory; cost $4,000; under way; E. Harris, builder.

**Mankato, Kan.**—Architects Hadley & Cooper, of Topeka, report: For Jewell County, two-story court house, 62 by 100 feet, brick, stone trimmings, tin shingle roof; cost $25,000; plans finished; contracts not let.

**Minneapolis, Minn.**—Architect Warren H. Hayes reports: Present condition and outlook for building exceedingly good. For First Presbyterian Society, church building, 145 by 98 feet, auditorium, one story, seating capacity, 800 persons, besides 300 in gallery; Sunday school department, two-stories and finished basement for toilet rooms, kitchen, dining rooms, etc., being built of granite and brownstone from Lake Superior, slate, and galvanized iron, antique oak finish; cost $55,000; under way; Geo. Summers, general contractor for the whole work.

An architect, who fails to give his name, reports: For Walter F. Stetson, three-story brick, 23 by 57 feet; cost $4,500; under way. For E. J. Phelps, three-story double tenement house, 41 by 57 feet, brick; cost $10,000; under way; D. Dinsmore & Son, builders.

**Newport, Minn.**—Architects Willcox & Johnston, of St. Paul, report: For Hon. H. C. James, frame residence; cost $6,000; under way.

**New Corporations.**—The Lockport Stone Company, at Chicago; capital stock, $40,000; incorporators, Walter J. Fiddyment, John C. Fiddyment, and August J. Knox. The Ætna Iron Works, at Chicago; capital stock, $50,000; incorporators, John I. Pfau, Frank C. Miller, and P. M. Pfau. The Meyenberg Brick Company, Chicago; $500,000, capital stock; W. S. Abbott, F. P. Meyenberg, and George W. Cass, incorporators. The Holbrook & Mann Sanitary Exhaust Ventilating and Heating Company, Chicago; capital stock, $300,000; incorporators, Henry N. Mann, Benjamin Holbrook, and Hardin J. Burlingame.

**North Springfield, Mo.**—Architect S. B. Abbott reports: Business fair. For Second Presbyterian Church, chapel, 50 by 32 feet, with porch entrance and vestibule, 16 by 16 feet, to be built of stone, rustic corners, cutstone corbets, stained glass windows, etc.; cost $4,500; under way: Rundall Bros., masons; Chas. George, carpenter. For E. L. Fay, alterations, etc., to residence; cost $2,500; D. E. Davis, contractor.

**Ottawa, Kan.**—Architect Geo. P. Washburn reports: Work is closing up for this season; prospects for 1887 are good. For First Baptist Congregation, two-story church building, main building 70 by 70 feet, chapel 50 by 75 feet, to be built of stone, slate roof, galvanized iron cornices; cost $30,000; under way; L. R. Crawford, builder. For United Presbyterians, one-story frame, 40 by 64 feet; cost $3,500; under way: Hunt & Demar, builders. For J. Jeffries, two-story and basement stone business block, 76 by 90 feet; cost $10,000; under way; day work. For E. H. Becker, frame cottage, 36 by 56 feet; cost $3,000; under way; Williams & Scott, builders. For A. R. Hamilton, frame cottage, 36 by 60 feet; cost $3,200; under way; Williams & Scott, builders. For J. E. Baer, two-story frame cottage, 26 by 32 feet; cost $2,100; under way. For Franklin county, poorhouse, two-story stone building, 42 by 74 feet; cost $9,000; under way; day work. For School District No. 35 near Ottawa, frame school house, 24 by 32 feet; cost $1,500; projected; also a number of smaller buildings.

**Paducah, Ky.**—Architect Oscar S. Teale, of New York City has prepared plans for a stock company for a four-story hotel building, 162 by 108 feet, to be located at the corner of Broadway and Chestnut streets, brick, stone trimmings, iron channels, beams, etc., hardwood finish, tiling and wood mantels, passenger and freight elevators, dumb waiters, electric bells, closets, bath, stained glass, etc., water power; question of electric lighting not yet settled; complete hotel kitchen and laundry outfits; special ventilating features to lavatories; cost of building complete $75,000; contracts not yet let.

**Paolo, Kan.**—Architect Geo. P. Washburn, of Ottawa, reports: For J. F. Merrill, two-story frame dwelling, 38 by 54 feet; cost $4,000; under way. For S. W. Davis, brick opera house building, 50 by 100 feet; cost $9,000; under way. For E. W. Robinson, frame dwelling, 26 by 54 feet; cost $2,200; under way.

**Pueblo, Colo.**—Architects Hadley & Cooper, of Topeka, Kan., report: Preparing plans for a stone church building, slate roof; cost $5,000.

**Russell, Kan.**—Architects Hadley & Cooper, of Topeka, report: For School Board, two two-story stone school houses, 26 by 57 and 65 by 73 feet; cost, respectively, $4,500, and $12,000; plans not yet completed.

**San Diego, Cal.**—Architects Willcox & Johnston, of St. Paul, Minn., report: For Episcopal Society, frame church building, 60 by 86 feet; cost $12,000; under way. For Hon. Geo. Puterbaugh, frame residence; cost $7,000; under way. For Rev. H. B. Restaick, frame dwelling; cost $3,200; under way.

**Sauk Rapids, Minn.**—Architects Willcox & Johnston, of St. Paul, report: For Grace Episcopal Society, frame church building, 26 by 70 feet, seating capacity, 250 persons; cost $3,000; under way.

**Sault Ste Marie, Mich.**—The First National Bank propose to erect a two or three-story bank building, 71 by 100 feet, of brick and stone, to cost $20,000. In connection with it the president says, the building will be commenced as soon as spring opens. Have not yet secured the architect. In regard to material, we have a local quarry of limestone, which we may use; if not, will use Chicago pressed brick.

**St. Louis, Mo.**—Architect Fred W. Folk reports: For Mrs. M. Cecil, two-story and mansard slate and gravel roof dwelling, 21 by 60 feet; cost $5,000; under way; J. H. Gray & Bro., builders. For Geo. Bannerhoff, two-story, stock brick, cutstone trimmings, 22 by 71 feet; cost $3,500; projected; outlook for spring, good

**St. Paul, Minn.**—Architects Willcox & Johnston report: For St. Mary's Church at Merriam Park, frame building, 35 by 66 feet; cost $3,500; under way. For Macalaster College, brick and stone wing to College building, 100 by 320 feet; cost $75,000; under way. For Dr. Abbott, two brick and stone residences, 42 by 60 feet; cost $16,000; under way. For T. B. Campbell, frame residence; cost $9,000; under way. For R. R. Dorr, stone and brick residence; cost $20,000; under way. For J. J. Macdonald, frame residence; cost $4,000; under way. For Mrs. W. V. Otis, frame residence; cost $14,000; under way. For T. Schurmeier, stone residence; cost $30,000; under way. For A. H. Wilder, stone and brick residence; cost $75,000; under way. For H. Stevens, frame residence; cost $10,500; under way. For Bank of Minnesota, fireproof stone building; cost $200,000; under way. For Frederick Driscoll, brick and stone residence; cost $34,500; under way. For Mrs. Casey, two three-story, brick and stone store buildings, 50 by 50 feet; cost $12,000; under way. For E. F. Skidmore, four four-story brick and stone store buildings, 50 by 80 feet; cost $20,000; under way. For C. S. Thurston, four-story brick warehouse, 56 by 90 feet; cost $16,000; under way. For Holland & Thompson, two-story warehouse, 40 by 80 feet; cost $8,000. For Bruns Beaupre, alterations in residence; cost $3,000; under way. For E. H. Cutter, alterations in residence; cost $9,000. For J. J. Odell, alterations in residence; cost $2,500; under way. For E. W. Winter, alterations in residence; cost $4,500; under way.

**Tecumseh, Shawnee Co., Kan.**—Architects Hadley & Collins, of Topeka, report: Two-story stone school house, 27 by 57 feet; cost $4,500; under way; T. H. Parker, builder. For District 91, Shawnee county, two-story frame school house, 26 by 56 feet; cost $3,250; under way; J. W. Chamberlain, builder. For District 22, Shawnee county, one-story frame school house, 45 by 67 feet; cost $2,283; R. Scheloske, builder.

**Texarkana, Ark.**—J. F. Smith & Co. will erect a three-story brick hotel.

**Topeka, Kan.**—Architects Hadley & Cooper report: The outlook is good; have considerable work on hand and still more coming in. For D. Shelton, two-story frame, colonial style, 35 by 44 feet; cost $3,500; under way; J. W. Chamberlain, builder. For J. H. Dennis, two-story frame dwelling, 22 by 40 feet; cost $3,000; plans in preparation; also work in other places, reported elsewhere in this issue.

**Wawaka, Ind.**—Architect H. W. Matson, of Ft. Wayne, reports: For School Board, two-story and cellar school building, 46 by 60 feet, brick and stone, slate roof, furnace heat; cost $7,000; bids to be opened December 16, at Wawaka.

**Winona, Minn.**—Architects Willcox & Johnston, of St. Paul, report: For M. G. Norton, brick and stone residence; cost $30,000; under way. For Hon. Thomas Wilson, frame residence; cost $15,000; under way.


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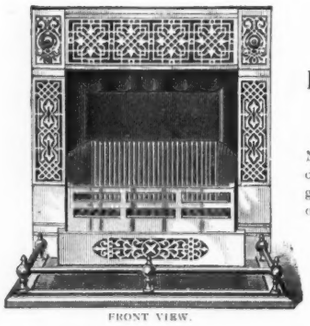

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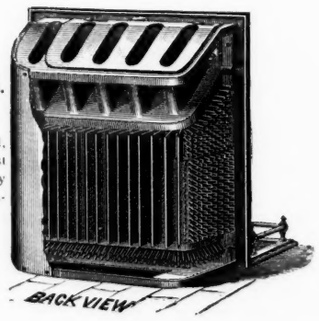


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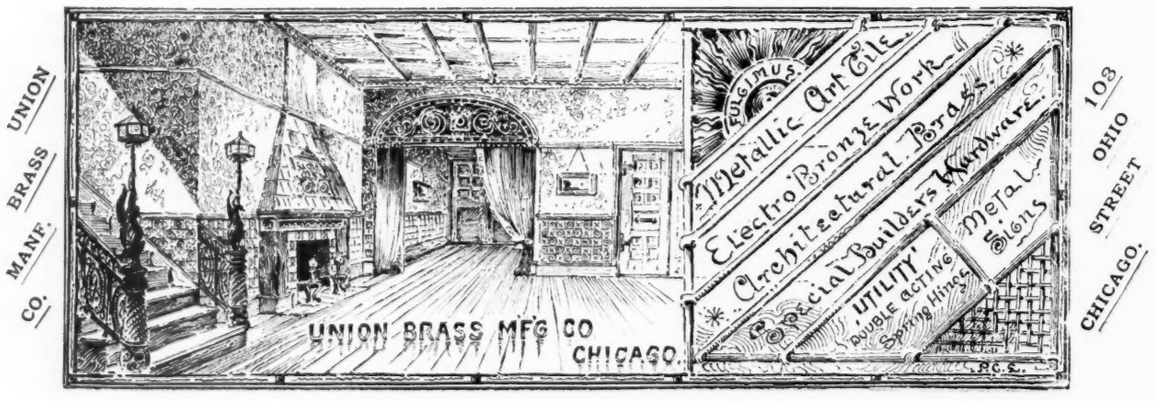

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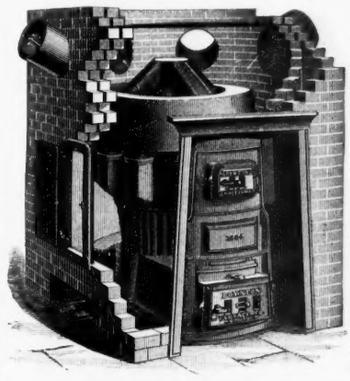

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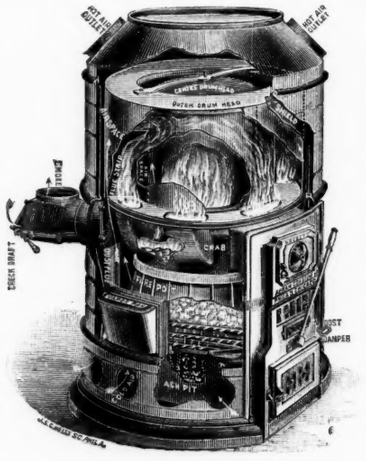

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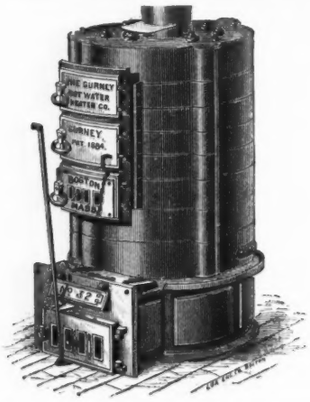

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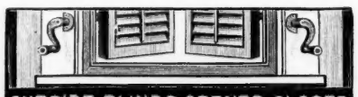

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Messrs. N. & G. TAYLOR CO., Philadelphia:
*Gentlemen:*—Three years ago we built six large business houses, and after investigation we purchased your *Old Style* double-coated tin as the best that we could find. The roofs have given us entire satisfaction, and if we do more building we expect to use the same tin. Yours with respect,
GID. D. HARRIS,
Pres't Merchants' Building Association.
Columbus, Miss.

—THE—

## "OLD STYLE"

—BRAND—

DOUBLE-COATED OR HAND-DIPPED

## ROOFING TIN,

QUALITY GUARANTEED.

**The Heaviest Coated and the Best Roofing Tin Made.**

**OLD STYLE.**
**Registered**

**Trade-Mark.**

Every sheet is neatly stamped in one corner with the name of the Brand, Registered Trade-Mark, and the name of the Firm, **N. & G. Taylor Co.**, who **Guarantee** the plate. Remember, the **"Old Style" is the only brand that is so Stamped and Guaranteed.**

ARCHITECTS when specifying the "OLD STYLE" brand, should insert the clause: "Each sheet stamped, not only with the name of the brand, but also the thickness (IC, IX or IXX)."

SAMPLES SENT FREE TO ANY ADDRESS.

For the protection of the Trade, we had every sheet stamped—a plan the **"imitations"** were quick to adopt. The Genuine **Old Style** is the only Roofing Tin stamped with the brand, Trade Mark and **name of Guarantor.**

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*Established 1810.* ═══PHILADELPHIA.

☞ **CAUTION!**—Many brands have been introduced from time to time in **imitation of "OLD STYLE,"** but as they could not, of course, compete in quality, the sellers adopted various expedients, and the trade is cautioned against these attempts to give a plate the **appearance** and weight of **OLD STYLE** by **making up the deficiency in coating with an extra weight of iron,** so as to increase the weight of the finished plate **with the material of least value and durability.**

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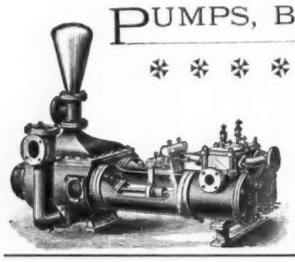

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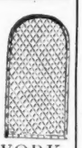

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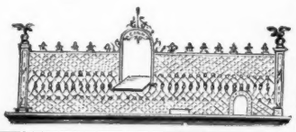

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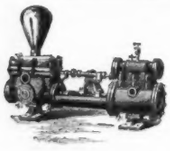

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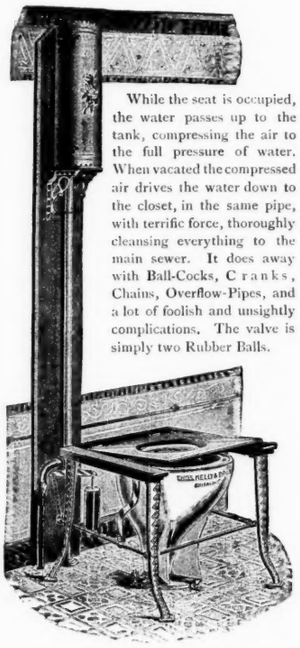

While the seat is occupied, the water passes up to the tank, compressing the air to the full pressure of water. When vacated the compressed air drives the water down to the closet, in the same pipe, with terrific force, thoroughly cleansing everything to the main sewer. It does away with Ball-Cocks, Cranks, Chains, Overflow-Pipes, and a lot of foolish and unsightly complications. The valve is simply two Rubber Balls.

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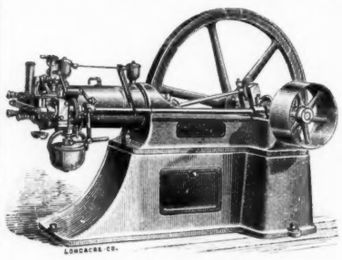
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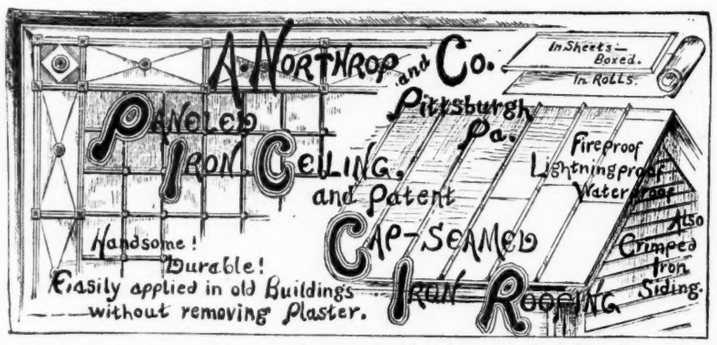

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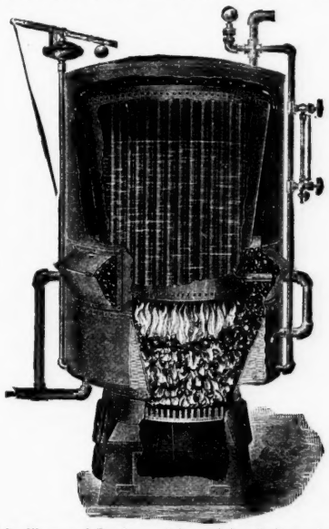

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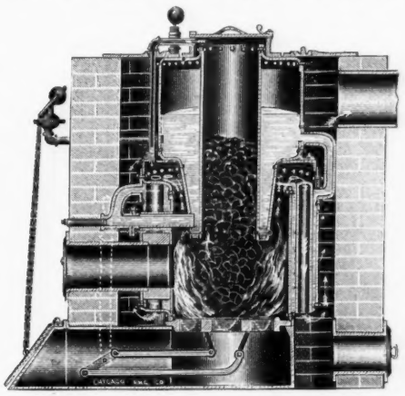

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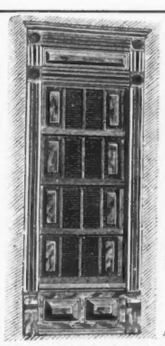

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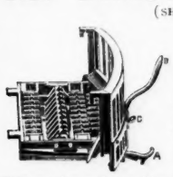

This cut shows the working of the basket.
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*B*—Lever for shaking.
*C*—Draft slide.

The Curtain Grate with Weaver's Patent Shaking and Dumping Attachment, is the most perfect and practical Grate ever offered to the public. Kept by all first-class dealers. Send stamp for circular.

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| Common | $ 7 00@ 7 50 |

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(Quotations furnished by manufacturers.)

| | |
|---|---|
| Chicago Anderson | $18 00@ 27 00 |
| " " molded | 65 00@300 00 |
| Indiana, Hinchliff | 16 00@ 22 00 |
| " " molded | 25 00@ 50 00 |
| Perth Amboy Buff | 50 00 |
| " mottled | 50 00 |
| Standard Purington & Kimball | 24 00 |
| Tiffany | 22 00@ 30 00 |

(Quotations furnished by Lockwood & Kimbell.)

| | |
|---|---|
| St. Louis pressed | $ 27 00 |
| " molded | 50 00@200 00 |
| Trenton pressed | 40 00 |
| " molded | 65 00@200 00 |
| Philadelphia pressed | 45 00 |
| " molded | 65 00@200 00 |
| Baltimore | 55 00 |
| Milwaukee | 25 00 |
| Zanesville | 30 00 |
| " enameled | 85 00@100 00 |
| Toledo, red common | 12 00 |
| " stock | 17 00 |
| Fire Brick | 25 00@ 30 00 |

### CEMENT, LIME, ETC.

| | Per Cask. |
|---|---|
| Chicago Lime | $ 0 65@ 75 |
| Wisconsin " | 90@ 1 00 |
| Milwaukee, Utica, Louisville, Akron. | 1 00@ 1 25 |
| Portland | 3 25@ 3 50 |
| Keene's coarse | 7 50@ 9 00 |
| Keene's fine | 11 00@12 50 |
| Plaster of Paris | 2 00@ 2 50 |
| Hair (cattle), per bu | 20@ 25 |
| Hair (goat), per bu | 40 |
| Sand (lake shore), per yard | 1 00@ 1 25 |

### STONE.

(Quotations furnished by J. S. F. Batchen.)

| | Per cubic foot. |
|---|---|
| *Limestone:* Promiscuous blocks. f. o. b. cars, Chicago. | |
| Buff Bedford | $ 50 |
| Blue Beaford | 65 |
| Hoosier deep blue Bedford | 65 |
| " buff " | 50 |
| Joliet | 35@ 50 |
| Lemont | 40@ 50 |
| Salem Oolitic | 50 |
| *Foundation:* | |
| Dimension on dock | 20@ 25 |
| Rubble, per cord | 8 00 |
| Sidewalk | 40@ 1 00 |
| Planed | 40@ 1 00 |
| *Sandstone*—Promiscuous blocks: | |
| Hummelstown or Philadelphia Brown Stone | 1 50 |
| Brown Connecticut | 1 50 |
| Amherst | 60@ 75 |
| Berea | 55@ 65 |
| Potomac Red Sandstone | 1 25 |
| Carbondell | 1 10 |
| Malone Blue Euclid | 55@ 65 |
| New York bluestone | 1 35@ 1 40 |

| | |
|---|---|
| *Marble:* | |
| Italian, veined | 4 00 |
| Tennessee, red | 2 50@ 5 00 |
| Tennessee, Knoxville | 3 00 |
| Vermont, white | 3 50@ 8 00 |
| Ophite | 4 50@ 5 00 |
| Armodite | 1 50 |
| *Slate:* | |
| Roofing, Vermont, per square: | |
| Green | 6 50 |
| Purple | 6 50 |
| Red | 13 50 |
| Black, Lehigh | 5 75@ 6 75 |
| Black, Chapman's | 7 30@ 8 00 |
| Black, Bangor | 5 50@ 5 80 |

### LUMBER, CAR LOTS.

(Lumbermen's Exchange, 250 So. Water St).

*Boards:* (Ordinary Dimensions.)

| | |
|---|---|
| Pine, 1st quality, clear | $46 00@48 00 |
| Pine, 2d quality | 44 00@47 00 |
| Pine, 3d quality | 42 00@44 00 |
| Common | 13 00 |
| *Siding:* | |
| Pine | 10 50@22 00 |
| *Framing Timber:* | |
| Pine | 12 00@17 00 |
| *Laths:* | |
| Pine | 2 00 |
| *Shingles:* | |
| Pine (sawed) | 2 40@ 2 60 |
| Cedar | 2 25@ 2 35 |
| *Miscellaneous:* | |
| Pickets, pine | 9@ 19 |
| Posts, cedar | 9 00@21 00 |
| Pine, yellow southern | 28 00@35 00 |

### HARDWOODS.

(Quotations furnished by Holbrook Co.)

| | |
|---|---|
| Walnut, 1st & 2d, 1 in | $ 75 00@ 80 00 |
| 1¼ and up | 80 00@ 100 00 |
| Walnut, counter top | 15@ 20 |
| Ash, 1st & 2d, 1 in | 30 00@ 32 00 |
| 1¼ & up | 33 00@ 36 00 |
| Ash Steps | 40 00@ 45 00 |
| Maple, 1st & 2d, 1 in | 25 00@ 35 00 |
| 1¼ & up | 35 00@ 40 00 |
| Oak, white, 1st & 2d, 1 in | 30 00@ 35 00 |
| 1¼ & up | 35 00@ 40 00 |
| Oak, white, quarter sawed | 50 00@ 55 00 |
| Oak, red, 1st & 2d, 1 in | 30 00@ 35 00 |
| 1¼ & up | 35 00@ 40 00 |
| Oak, red, quarter sawed | 40 00@ 50 00 |
| Cherry, 1st & 2d, 1 in | 75 00 |
| 1¼, 1½ & 2 in | 80 00@ 85 00 |
| 2½, 3 & 4 in | 95 00@ 100 00 |
| Beech, Red, 1st & 2d | 25 00@ 30 00 |
| Whitewood, 1st & 2d, 1, 1¼, 1½ & 2 in | 26 00@ 30 00 |
| 2½, 3 & 4 in | 32 00@ 38 00 |
| Birch, red, 1st & 2d | 35 00@ 40 00 |
| Butternut, 1st & 2d, 1 in | 45 00@ 50 00 |
| 1¼ & up | 50 00@ 55 00 |
| Sycamore, 1st & 2d | 20 00@ 25 00 |
| Gum, red, 1st & 2d, 1 in | 25 00@ 30 00 |
| 1¼ & up | 35 00@ 40 00 |

### FINISHING WOODS.

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|---|---|
| Mahogany, Mexican, per lb | 15@ 20 |
| Mahogany, St. Domingo, per lb | 20@ 25 |
| *Finishing Woods, continued:* | |
| Mahogany, Cuba, per lb | 12@ 20 |
| Rosewood, per lb | 5@ 15 |

### CALIFORNIA WOODS, ETC.

(Quotations furnished by James O. Cuthbert.)

| | |
|---|---|
| Redwood lumber | $50 00@$55 00 |
| Redwood shingles—square, sexagon, round, diamond and octagon, small quantities | 5 25@ 5 50 |
| Mexican Spanish cedar | 150 00@300 00 |
| California pine | 65 00@ 75 00 |
| *Georgia Yellow Pine:* | |
| Flooring: | |
| 1st & 2d clear, 4 in | 35 00 |
| 1st & 2d clear, 6 in | 35 00 |
| Boards, D 1 s | 33 00@ 35 00 |
| Beaded Ceiling: | |
| 1st & 2d clear, ½ in | 18 00@ 21 00 |
| ⅝ in | 26 00@ 30 00 |
| ⅞ in | 33 00@ 36 00 |
| Step plank: | |
| 1st & 2d clear 1¼, 1½ & 2 in | 33 00@ 35 00 |
| *Georgia Cypress:* | |
| Lumber, 1st & 2d clear | 35 00@ 40 00 |
| Shingles | 3 75@ 4 25 |
| *Frame Oak Lumber and Timber:* | |
| Plank | 23 00@ 25 00 |
| Timber | 24 00@ 30 00 |

### PAINT, ETC.

| | Per lb. Dry. | Per lb. In Oil. |
|---|---|---|
| White lead (American) | $ | 7@ 7½ |
| Zinc, white (American) | 8@10 | 10@ 12 |
| Red, Venetian | 2@ | 6@ 12 |
| Red, Vermilion | 20@50 | 40@1 00 |
| Red, Indian (English) | 12@ | 22 |
| Yellow, Ochre | 2@ | 15 |
| Yellow, Chrome | 18@ | 25 |
| Green, Chrome | 12@ | 20 |
| Green, Paris | 20@ | 35 |
| Black, lamp | 8@ | 30 |
| Blue, ultramarine | 16@ | 35 |
| Putty | | 3 |
| Whiting (dry) | 1@ | 2 |
| Paris white (English) | 2@ | 3 |
| Litharge (American) | 6@ | 10 |
| Sienna, burnt | 9@ | 16 |
| Umber, burnt | 7@ | 16 |
| Oil, linseed (raw), per gal | | 42 |
| Oil, linseed (boiled) " " | | 45 |
| Turpentine " " | | 45 |
| Varnish, coach, " " | 1 25@ | 2 00 |
| Varnish, shellac, " " | 3 25@ | 4 00 |

### HARDWARE.

| *Nails:* | Per Keg. |
|---|---|
| Spikes, wrought | $3 40 |
| Tenpenny, common | 2 10 |
| Shingle, 4's | 3 95 |
| Lath, 3's fine | 5 10 |
| Steel nails, 10's to 60's | 2 35 |

For steel nails add 20 c. per keg.
For finishing-nails add $1.50 per keg.
For casing-nails add 75 c. per keg.


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I beg to express my entire satisfaction in the working qualities and the rich coating of the Genuine *Old Style*, as I find it far ahead of my expectations. As the building covered is my own, I was, of course, exceedingly anxious to secure the very best roofing that could be had. Having heard so much of Genuine *Old Style*, I sent to you for a sample sheet, and also tested many other so-called re-dipped plates, but after careful examination and a thorough practical test I was convinced that the Genuine *Old Style* was THE HEAVIEST COATED OF THEM ALL, not excepting the old MF brand. I state this injustice to yourselves, as you were the first firm to make a really first-class and thoroughly reliable guaranteed roofing tin.

The tin worked like sheet lead, and with not a single crack. My men are delighted to work such tin, and should I want any more I will most certainly order from you.

The stamping of each sheet with the brand of the tin, I consider a good idea, and congratulate you on your originality. To all those wishing a first-class roofing tin in every respect I heartily commend the Genuine *Old Style* double-coated roofing tin.

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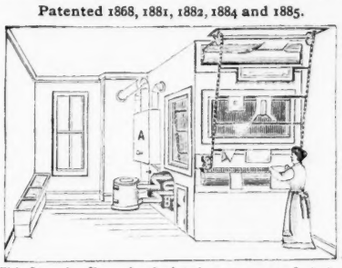

This Laundry Dryer by the late improvement of windows (as seen in cut) is made entirely light; thus securing all the advantages of *Sun Drying* without dust or smoke. The experience of my patrons proves it to be the most simple and absolutely the best Dryer ever placed before the public. It takes but little room, is safe, and easily operated.

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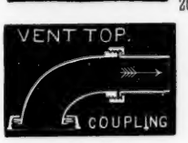

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## Why roofers should prefer to use stamped and guaranteed roofing plates.

WARLICK & WINGATE,
ARCHITECTURAL SHEET-METAL WORKERS.
ATLANTA, GA., October 9, 1886.

MESSRS. MERCHANT & CO., PHILADELPHIA, PA.,

*Gentlemen:*—Your letter, in regard to guaranteed tin plates, to hand. In reply, will say we heartily agree with you that the system of stamping each sheet is productive of fairer competition, and a thing no reliable firm need fear.

It should be a pleasure to any honest man to be able to prove to his customers that everything he does is according to plans and specifications. *Stamped Sheets* enables him to do this in the roofing business. You have done a good work. Keep on.

Very respectfully, WARLICK & WINGATE.

SHANKS & BARRETT,
PRACTICAL TINNERS,
RICHMOND, VA., October 12, 1886.

MESSRS. MERCHANT & CO., PHILADELPHIA, PA.,

*Gentlemen:*—In reply to your letter in reference to stamping roofing-plates would say that we recognize it as the only way by which we can secure honest competition, and, therefore, we are certainly in favor of stamping all sheets.

We would say of your "Camaret" brand that we have been unable to find its equal in the roofing line. Hoping that you will succeed in your good work for honesty, we remain,

Yours very truly, SHANKS & BARRETT.

Architects desiring to use the "Gilbertson's Old Method" should be particular to specify in full the words: "Gilbertson's Old Method," being careful not to omit the word "*GILBERTSON'S*" as there are other "Old Method's" now being imported for the purpose of trading upon the well known reputation of our Brand. This caution is rendered absolutely necessary, as the imitation brand is inferior in quality and can naturally be sold at a lower price.

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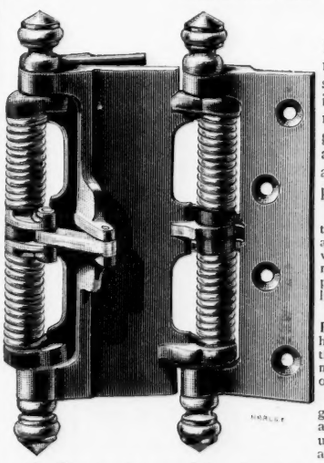

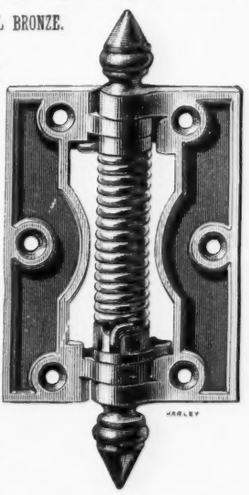

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2d. All the Pins and Push Bars are made of steel and hardened, thus making them the most durable Butt in the market, as the greatest amount of wear comes on these parts.

3d. The Springs exert their greatest power when the doors are closed, and their force gradually decreases as the doors are opened.

4th. They are the most easily adjusted to the doors, neat and attractive in construction and finish, and not liable to get out of order, and adapted to severe wear.

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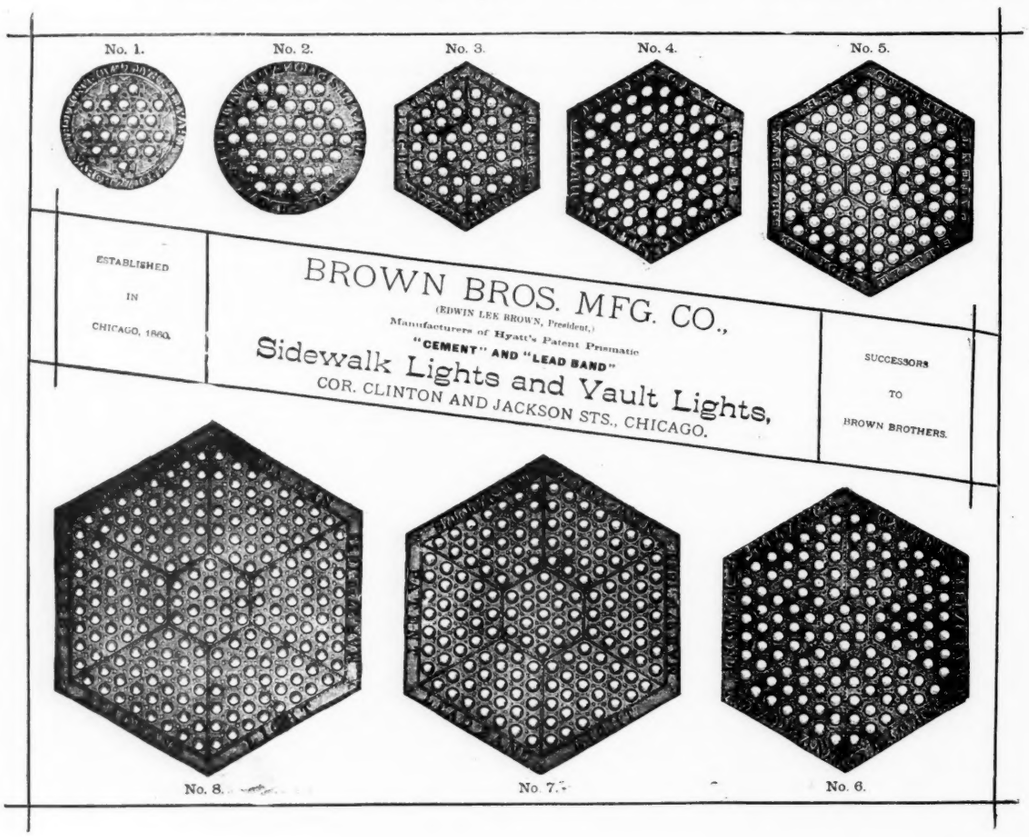

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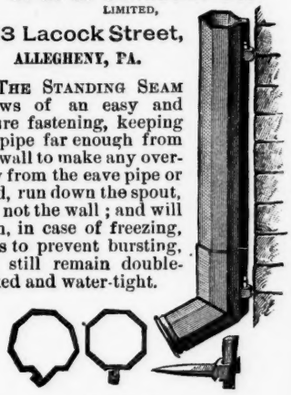

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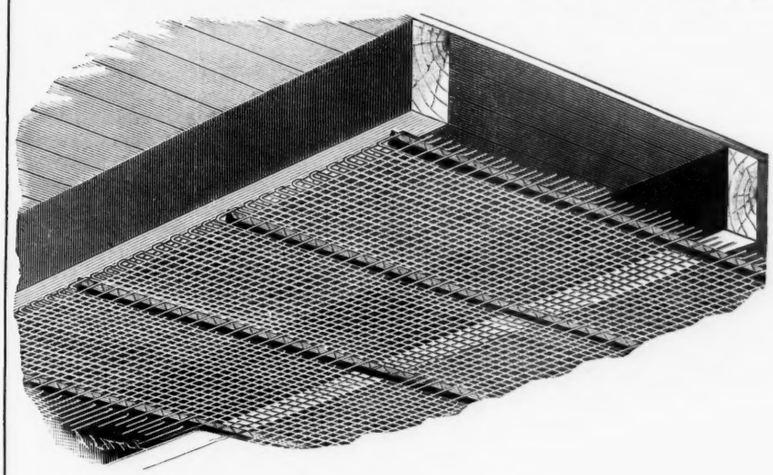

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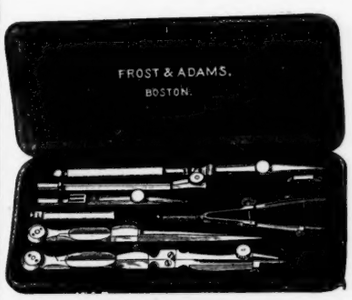


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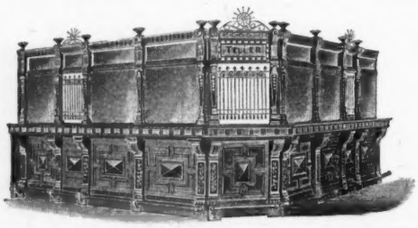

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